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The Journal of the Fire Protection Profession Since 1877

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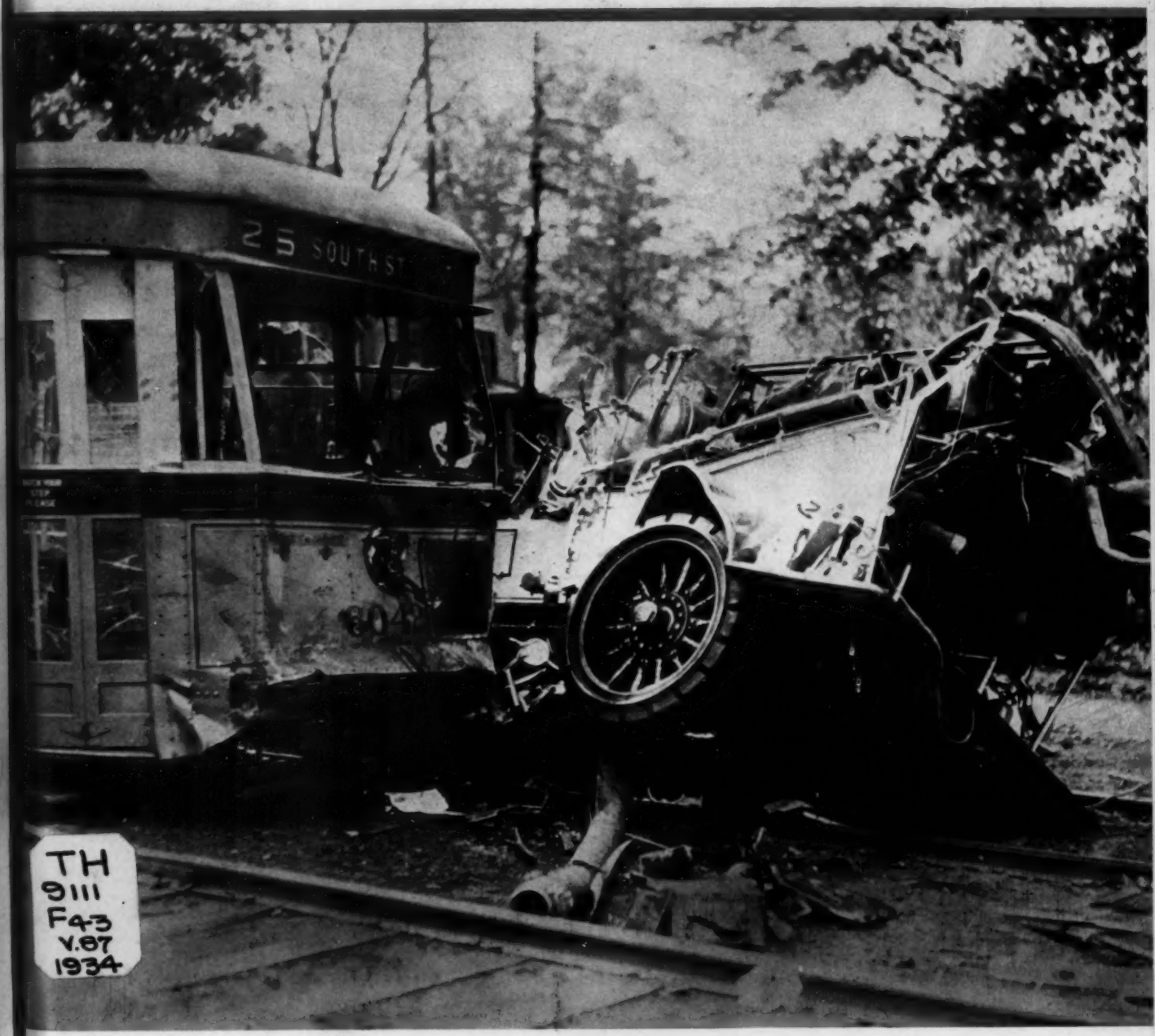

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MEET UNDERWRITERS' TESTS

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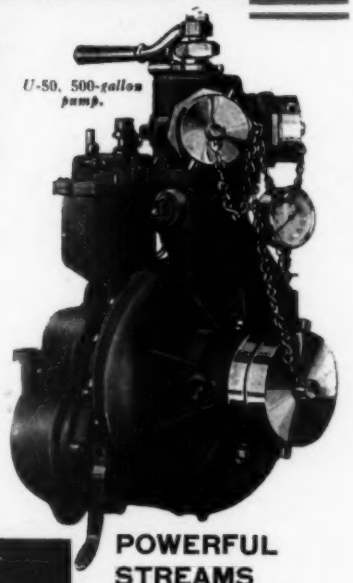
Our Bulletin 75 gives the plain facts. Write for it. AMERICAN STEAM PUMP COMPANY, Battle Creek, Michigan.



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BARTON FIRE PUMPS

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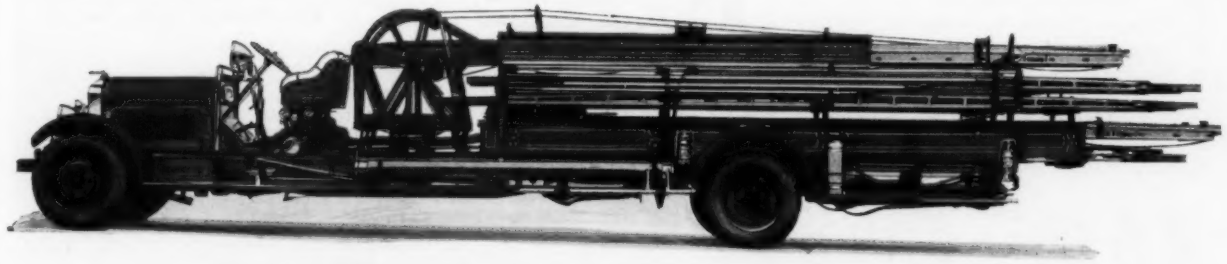

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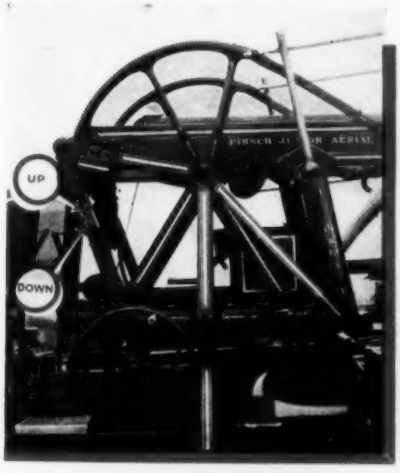

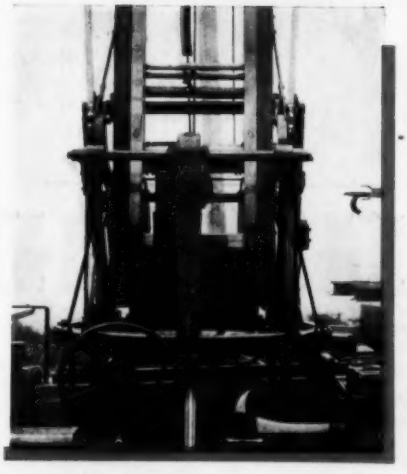

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FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

R. H. LOCKWOOD, Associate Editor
FRED SHEPPERD, Editor
N. N. WOLPERT, Assistant Editor

To All
Our Friends
in the
Fire Service

Merry
Christmas
!

IN THIS ISSUE

VOL. 87 December, 1934 No. 12

Page

With the Editor 421
Selecting a Chief from Out of Town
By Fred Shepperd

Prosecuting Arson Cases (Illustrated) 422
By A. F. Gallagher

Chemical Substances and Fires (Illustrated) 425
By Kenneth A. Kobe

The Round Table Department 428
Discussion on Compensation for Volunteer Firemen

Questions and Answers 432

What's Burning 434

Convention Dates 440

False Alarm (Illustrated) 448
Humorous Side of the Fire-Fighting Profession

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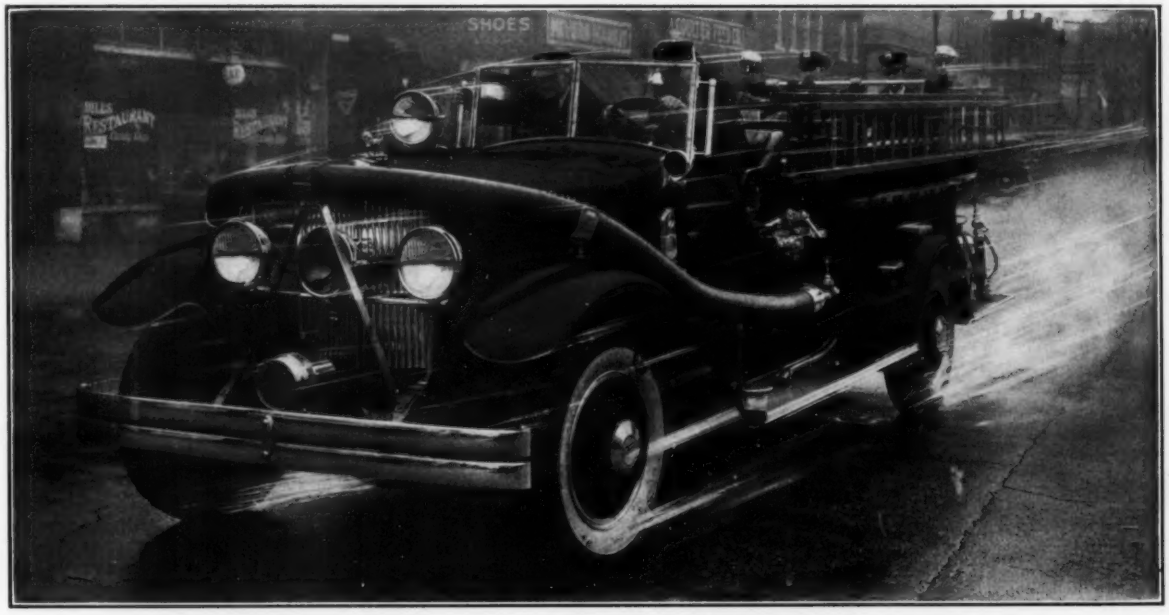

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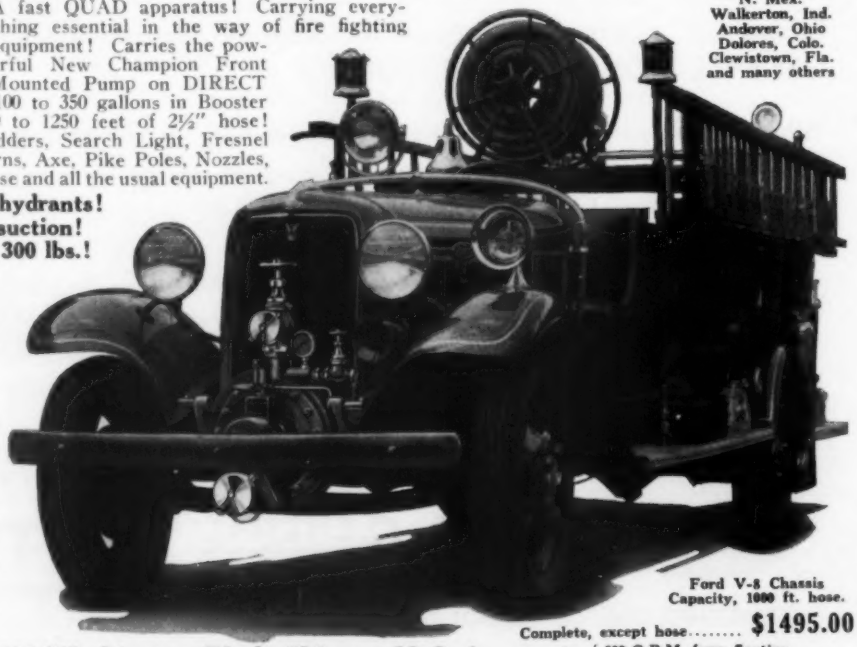

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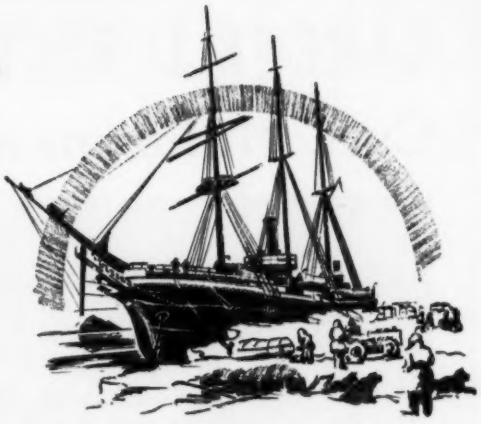

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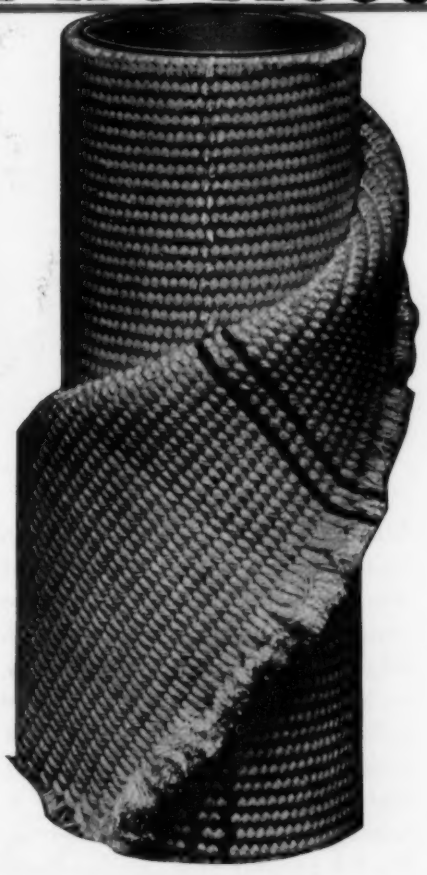
MANHATTAN Fire Hose



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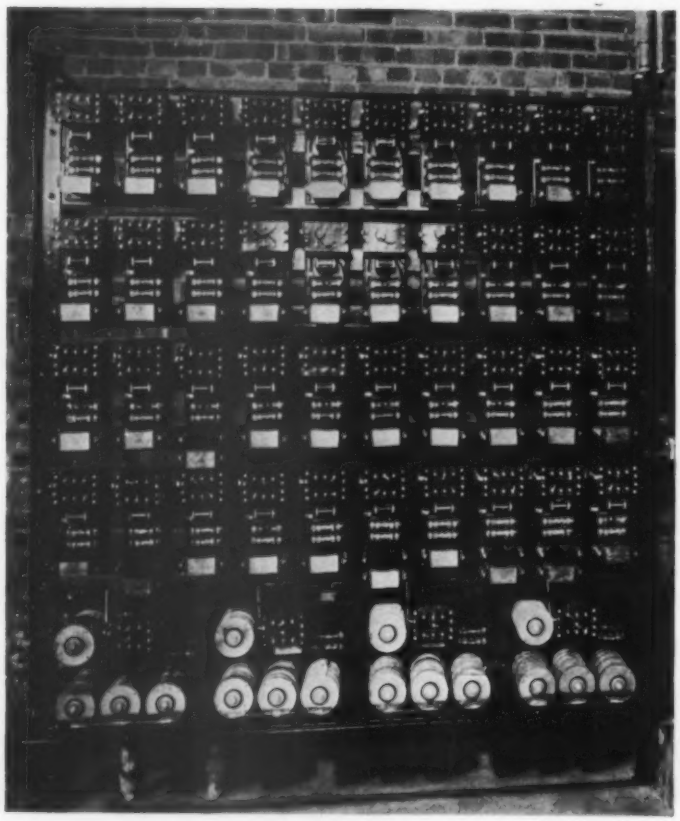

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The Journal of the Fire Protection Profession

Volume 87 DECEMBER, 1934 Number 12

With the Editor

Selecting a Chief from Out of Town

There seems to be a marked tendency today on the part of some of the smaller cities to pick an out-of-town candidate to fill the office of Fire Chief when a vacancy occurs.

Upon first thought there might appear to be sound arguments for this practice, such as, for example, the better discipline that might be developed by a stranger in command of the department.

But there are factors involved which far outweigh any advantage so secured. While better discipline may apparently be attained, there is created a feeling among the men, and particularly the officers, that no matter how excellent their record in the department, there will never be a possibility of their reaching the top.

Ambition and industry on the part of the department personnel is best fostered by the assurance that the highest reward in the service—promotion to the position of Chief—is attainable by any man if he is qualified for the position and is deserving of the responsibility. Remove this incentive and every man in the department is affected directly or indirectly. The loss is infinitely greater than any possible gain in discipline created through placing a stranger at the top.

Civil Service prevents this latter practice. Large cities never employ it. It would thus seem that opinion is overwhelmingly against the practice.

Within the ranks of any department may be found men capable of filling the office of Fire Chief effectively. But those vested with the authority to make the selection must possess sufficient intelligence to pick the right man.

Fred Sheppard

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Prosecuting Arson Cases

By A. F. GALLAGHER,
Counsel, Cleveland, Ohio,
Arson Squad

TO prove conclusively that the arson law is not an offspring of the insurance company, we have but to remember that it is of ancient origin. In the days of Imperial Rome, when it was governed by its 12 Legal Tables, we find written in Table 8, Section 10, the arson law of that day. "If a man," so the law read, "set fire to a house or a stack of corn set up near a house, he shall be bound, scourged, and burnt alive." We notice the law read, "If a man set fire." In all probability a woman could have committed the crime of arson and yet be immune to the law. Strange to say, there was only one other crime, that of parricide, the crime of killing one's father or mother, that had the same punishment of being bound, scourged and burnt alive.

When the Romans, moving west and crossing what is now known as the English Channel, conquered and controlled that section of Europe for four hundred years, they no doubt brought their arson law with them, for centuries later we find the arson law embodied in the English Common Law slightly modified and reinforced. It read: "Whoever," to include man and woman, an improvement over the Roman law and specified the types of structure, namely a dwelling house, the property of another, and the person found guilty was punished with death by hanging, as the custom was at that time. Neither husband nor wife could be convicted for burning the property they occupied, for in theory in the eyes of the law they were considered as one.

English Brought Arson Laws Here

When the English immigrated to our shores, they brought their laws with them and from them we inherit the modern Arson Law. However, Ohio was never subject to Common Law Crimes. The Arson Law comes to us in statutory form as prescribed by our Legislators. The law as written today appears quite adequate to meet the present situation, with the exception of Section 12435. In that Section it states that "whoever burns chattels, etc., as railway coach and car, automobiles, and other vehicles to the value of $25 shall be imprisoned in the penitentiary from one to three years."

Defect in Model Arson Law

One Joseph Prochaska was arrested and indicted for maliciously burning a Ford touring car, the property of another. He was found guilty by a jury and discharged by the court because the jury had found a value of $20 for the automobile and the law is silent for any damage to a chattel that is valued less than $25. This is a serious defect in our so-called "model" Arson Law, and should be cured at the next regular session of our Legislature.

Defendant Must Be Informed of Constitutional Rights

Assuming that the next fire you respond to is of a suspicious or incendiary origin and you detain the occupant, owner or some person with a financial interest in that fire, and supposing he is willing to confess that he started it or caused it to be started. That statement would be inadmissible as evidence, because he had not been apprised of his Constitutional rights and that simply means this: that he must be informed that he is being charged with a crime that the law gives him the right to either make a statement or refuse to make a statement and that statement may be used either for or against him at the time of his trial. Then, having been informed of his Constitutional rights, if he so desires to make a statement, that would be admissible in any court of law.

In this Bedroom, the Arsonist had Soaked the Streamers, Clothing and Newspapers with Oil Preparatory to Touching Off the Fire

To Prevent Writ of Habeas Corpus

If a person is detained for investigation for the crime of arson for 24 hours or longer, generally a writ of habeas corpus is filed in his behalf. The term means "you have the body" of some person illegally and unlawfully. You are depriving some person the right of liberty and pursuit of happiness as provided in the Federal and State Constitutions. To prevent this writ from being allowed and having the suspect discharged, it is well to charge

him with the crime of arson; then bond may be set and you can continue your investigation.

Another procedure often resorted to is a motion to suppress the evidence. In that motion counsel for the defendant alleges that you have made an unreasonable search and seizure; that you have taken certain property from the home of the defendant without his permission or consent. Of course, the answer to that motion is that there was not any unreasonable search and seizure; that you entered that dwelling by consent and that it was your duty to extinguish the fire therein and that the articles you have seized as evidence are of such a nature as to be contrary to law, in the manner and the place they were found.

Law Assumes Presumptive Innocence

The moment the defendant enters the court room he is clothed by law with the robe or garment of presumptive innocence, and that presumption remains with him throughout the trial. It is only when all the testimony has been heard and evidence received, that the court or jury has a right to remove that presumption, and in order to convict him, he must be guilty beyond a reasonable doubt, and what is a reasonable doubt is not easily understood. The law defines it as follows: It is not a mere possible doubt, because everything relating to human affairs or depending upon moral evidence is open to some possible or imaginary doubt. It is that state of a case which, after the entire comparison and consideration of all the evidence leaves the minds of the jurors in that condition that they cannot say they feel any abiding convictions to a moral certainty of the truth of the charge.

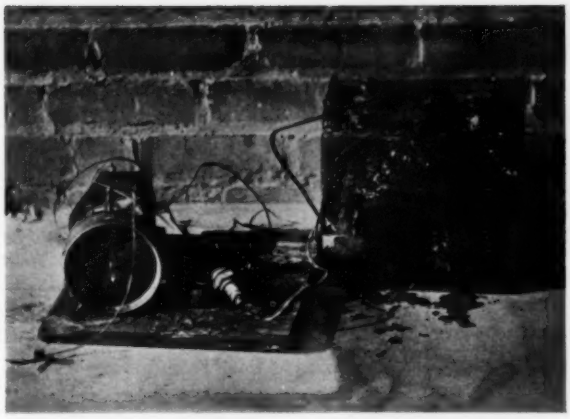
Circumstantial Evidence Must Be Convincing

Arson cases, as a rule, are predicated purely upon circumstantial evidence. Some persons think that circumstantial evidence is weak and flimsy, but that, of course, is not true. It is sometimes stronger than direct evidence, because a person may take the witness stand under oath and testify for the State or for the defendant and either be honestly mistaken in his testimony or deliberately perjuring himself, which is not an uncommon occurrence. Circumstantial evidence consists of the facts and circumstances surrounding the crime.

Whenever the state relies solely upon circumstantial evidence to convict, that evidence must be so convincing as to be irreconcilable with any other reasonable hypotheses than that of the guilt of the defendant. In other words, however pointed, suspicious or damaging the evidence may appear to be, if it is reconcilable with his innocence, the suspect must be acquitted.

Evidence in a Suspicious Fire

We had an occasion to investigate a suspicious fire where there had been an explosion. The Battalion Chief in charge termed it a "natural gas explosion," but there is an order issued by James E. Granger, Chief of Cleveland, that whenever there is an explosion, or any suspicious circumstances surrounding a fire, the officer in charge is instructed to notify the "arson squad" for final investigation and disposition. The explosion had blown the rear of the dwelling house from its foundation and there had been considerable fire throughout the building which was a double dwelling. In the garage we found five or six plumber's candles and a quantity of sawdust scattered over the floor. Our first suspicion was that the



Fire Making Machine, Consisting of Automobile Storage Battery, Spark Plug, Vibrating Coil and Alarm Clock

explosion was caused by a home-made bomb or possibly that it was a candle job. Firemen overhauling the debris were instructed to look for a candle or other evidence of a criminating nature.

We found in the basement the remnants of a wine or vinegar barrel with about a foot high of paper and rags saturated with gasoline, and a short distance from it a candle about an inch and a half long, being of the same diameter as those found in the garage. We lit one of the candles in our laboratory and permitted it to burn to the size of the one found in the basement. It required about seven and a half hours which tallied exactly with the time the defendants alleged to have been absent from home.

Jury Disagrees on Strong Evidence

Probably the most damaging piece of evidence that was ever offered in the trial of an arson case was a contract in writing found in the yard which contained an agreement between the owner of the property and an unnamed person to burn the property and collect the insurance and divide it equally. It also contained a proviso that should no money be realized from the insurance company, no one, meaning the torch man, of course, was to be paid. We went to trial with that case. We procured a handwriting expert who testified that the person that had written this contract was unmistakably the person that had made application for service from the East Ohio Gas Company, the Cleveland Electric Illuminating Company, that had signed three or more applications for minor civil service positions, that had signed certain withdrawals and deposit slips from a certain bank and that had signed 25 or more receipts to a former tenant that had occupied part of that dwelling.

One would think that with that evidence it would be an easy matter to convict, but, strange to say, the foreman of the jury said we had not produced sufficient evidence to convict and there was a disagreement, nine for conviction, and three for acquittal. The case came on again for hearing shortly after and we procured a naturalization record which described the defendant's height, weight, color of his eyes, and it was signed with the same signature, which appeared on all of the other instruments. When confronted with that evidence, he pleaded guilty.

Motives and Alibis

A motive is that which incites or stimulates action, any cause or reason that prompts the mind or will to act,

An Incendiary Layout, Consisting of Oil Soaked Streamers, Connecting a Kitchen and Dining Room

an inducement to indulge in crime. Common motives are financial difficulties—foreclosure threatening or pending. Yet a motive in itself is not a necessity, for a robber may have a thousand dollars in his pocket, yet hold up the next person that passes. A millionaire may conspire to make another million unlawfully.

An alibi is usually the defense in these types of cases. Alibi means elsewhere, elsewhere at the time the crime is alleged to have been committed. And if the alibi is successfully proven, the defendant must be acquitted.

When an Accidental Fire Is a Criminal Act

There is only one case where an accidental fire can be a criminal act and that is when a burglar is guilty of arson. He perhaps entered the factory or store for the express purpose of taking property therefrom, and while on the premises accidentally tipped over a lamp or threw away a lighted match not really intending to set the place on fire. But since his presence on the property was unlawful in the first place, he can be prosecuted for the crime of arson; yet he intended to commit another crime.

Status of a "Dying Declaration"

One of the more important factors in the investigation of arson cases is to be able to take what is called "dying declarations," so that it may be presented later in a court of law. Supposing that you trail a suspect to a hospital; that he had been seriously burned from an incendiary fire, and is willing to confess that he had a part in it and may implicate others. That statement is reduced to writing; the following day he dies. The accomplices are apprehended and brought to trial. It would be impossible to convict them on the statement in writing because it does not come within the purview of legal requirement. In order to make a dying declaration valid, the declarant must be under the fear of apprehending death. He must think that he is going to die. He must give up all hopes of recovery—a statement made under those conditions and incorporated therein is valid and may be offered and admitted as evidence.

Successful Investigation of Arson Cases

To be successful in the investigation of arson cases, the investigator must first equip himself with the equivalent of genuine Apostolic zeal; to be patient, diligent and perseverant in the pursuance of his duty; to present the results of his findings in a clear, concise and ordinary manner to judge or jury. Thus fortified and equipped convictions in arson cases must necessarily follow as a matter of course.

(Excerpts from a paper read before the annual convention of the Ohio Association of Fire Chiefs.)

Old Law Tenements Must Improve Entrances

New York City has now in effect a regulation which calls for fire-retarding of entrance, stairs and public halls of old law tenement houses. Detailed instructions have been issued by the Tenement House Department explaining what must be done and methods which may be followed to comply with the law. The fire-retarding materials must be installed in the specified parts of the building by January 1, 1936.

Cellar ceilings must be fire-retarded immediately in all multi-family houses. In a number of cases, violation notices have been issued.

How New York Fought Election Fires

Perhaps no city in these United States is the scene of as many bonfires on the night of Election Day as is New York. For years it has been traditional to store away tons of wood for days in advance in preparation for Election Night. This year, however, Chief McElligott requested and received the aid of the Department of Sanitation in the form of eighty-six flushing trucks.

It was the first time that the Street Cleaning Department aided the Fire Department in that manner. The trucks were assigned to the neighborhods that have been notorious for their bonfires and for gang bravado. To each flusher was assigned a policeman and a fireman. The latter was required to wear his fire hat. Trucks were driven by Sanitation Department chauffeurs.

There were 1,670 bonfires in New York on Election Night, although the election from the standpoint of political importance embraced chiefly one local important contest. Of the 1,670 bonfires, 870 were extinguished by flushing trucks, 271 by hose wagons, 206 by pumpers, 177 by police and 146 by firemen on street patrol.

Lieut. William J. Fealy, Supervising Engineer of the Fire Department was in the field supervising the work of the flushing machines. He reported that in some instances the flushers revisited the same locations as many as six and seven times and extinguished as many fires during the course of the evening. The worst district was in the East Harlem section of Manhattan where the denizens of that locality usually celebrate such an event. Tenement district in Manhattan, Brooklyn and Bronx boroughs showed the greatest bonfire activity. It is estimated that approximately $100,000 in street paving repairs was averted by the activity of the flushing trucks. It likewise indicates that hundreds of bonfires were extinguished without fire alarm or responses by fire apparatus.

To cope with this annual emergency, the Fire Commissioner suspended the two-platoon system for the evening. The platoon that ordinarily would report at six o'clock in the evening, came on at 5 instead. Each engine company comprising a pumper and a hose wagon was split into two units for the emergency—the hose wagon responding on telephone call for bonfires, the pumper being reserved for straight box alarms. The last due engine company, truck company and battalion chief were relieved from responding on first alarm, as were deputy chiefs, rescue companies, towers, and fireboats. Firemen were assigned to unoccupied commercial and residential buildings to prevent hoodlums from raiding the premises for firewood. The high pressure fire service was maintained at seventy-five pounds from 5 o'clock until midnight, thereby eliminating the necessity of many starts and stops of the pumps. WM. JEROME DALY.

Chemical Substances and Fires

By KENNETH A. KOBE,
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FIRE is man's most important external chemical reaction. The intelligent use of fire and heat has raised man from savagery to civilization. Only when fire is out of control is it a menace to society. In order to prevent the latter catastrophy, it will be necessary to discuss some of the fundamental chemical principles that control this reaction.

We all know that the reaction of oxygen with a combustible substance (oxidation) gives off heat (exothermic reaction). This heat may be given off in several ways, but at least some of the heat of reaction goes to raise the temperature of the substance being oxidized. It is a general rule in chemistry that the rate of a reaction doubles every 18° F. rise in temperature. Thus if we have a slow oxidation going on at room temperature, about 70° F., and the temperature is increased to 88° F., the reaction goes twice as fast. If we increase the temperature to the boiling point of water, 212° F. or an increase of 142° F., the reaction is going 2^8 or 256 times as fast as at room temperature.

Spontaneous Combustion

Let us see how these principles apply in spontaneous combustion. We may initiate spontaneous heating, the first phase of spontaneous combustion, by either of two means: (a) chemical reaction, and (b) biochemical reaction. The first is more familiar as it is the type of reaction which takes place when the oxygen of the air unites with linseed oil or similar materials to cause spontaneous heating.

The second type is responsible for many fires in hay stacks and similar moist vegetable material. It is initiated by the action of bacteria on the moist hay; these form highly unsaturated products which unite with oxygen giving off heat. The first stage in the process is one in which heat is generated. If the oily rags or the moist hay is spread out so that air is readily accessible to all parts or the mass, the heat slowly formed in the chemical reaction will be dissipated to the air and there will be no combustion. It is only when the oxygen has access to the combustible material, but the heat cannot escape, that combustion can take place. The inside of a haystack possesses sufficient oxygen and the hay is an excellent insulator to prevent the loss of heat. The more reaction the more heat is liberated as a result of the reaction, so the temperature rapidly mounts and finally the ignition temperature is reached, at which the material takes fire, if sufficient oxygen is present.

Let us examine some of the chemical reactions which cause spontaneous heating. Of course, the most familiar case is the heating caused by paint vehicles. These oils, in order to be drying oils, must be able to absorb oxygen to give the tough gelatinous film desired in a good paint. It is unfortunate that this reaction gives off so much heat that it is a source of danger. No danger can result when the oil is spread in a thin film on a wooden surface, for here the rapid dissipation to the atmosphere of the heat formed removes all danger. Only when the heat cannot escape is there danger. There is a great difference between the animal and vegetable oils and the mineral oils in respect to the ability to cause spontaneous heating. The former, like linseed oil and lard oil, are termed unsaturated and possess this ability to absorb oxygen. The mineral oils are usually saturated and do not absorb oxygen at ordinary temperatures.

Spontaneous Heating in Coal

Coal is noted for spontaneous heating. Not only is spontaneous heating a fire hazard, but it is an economic loss, as the heat given off in this manner is part of the heating value of the coal which is lost. One of the primary causes of this heating in coal is the oxidation of the pyrites, FeS_2, present in the coal. Fine coal dust heats more readily than lump coal due to the much greater surface exposed to the air. The ability to heat has also been connected with the moisture content of the original coal. In Washington, where many of the coals are sub-bituminous, contain much moisture and dust rather easily, the storing of these low-grade coals must be carefully watched to prevent spontaneous combustion.

Biochemical Agencies Which Cause Heating

To return to the spontaneous heating initiated by

Fire in a Barn Caused by Spontaneous Ignition in Hay

Fighting a Fire in an Oil Refinery with Fire Foam

biochemical agencies, it is found that hay, grass, manure, grains, seeds, feed, tobacco, fish meal, or any material harboring micro-organisms which can feed on it, can undergo spontaneous heating. Undoubtedly the most familiar case of such heating is a manure pile, which often heats, but fortunately the high moisture content causes the heat to form steam so that the temperature never reaches the ignition point. Probably the small boy is blamed for smoking where the loss of a hay stack is due to spontaneous ignition. Badly made hay which is stacked while wet will heat and ignite. A stack fires spontaneously from 5 to 13 weeks after it is built, generally 8 or 9 weeks. Charing and ignition can occur at a temperature as low as 190° F. Hay which fires spontaneously has a smell peculiarly its own, somewhat like that of tobacco.

One more point may be mentioned concerning fuels which have undergone heating. These materials all contain oxygen as part of their composition. Cellulose, wood, peat and such materials contain more oxygen than the higher grade fuels. If these materials are heated to a certain temperature dependent upon the material, a combustion process takes place within the material itself. Thus if wood is heated above 525° F., a reaction which gives off heat occurs within the wood itself. Gaseous and liquid products are formed and a mass of carbon remains behind. Thus we see that spontaneous heating must be stopped before the temperature reaches the decomposition point. It is not enough to keep the oxygen away, for the fuel itself furnishes the oxygen. Those who have seen a peat bog smouldering despite all attempts to flood the bog, realize that the peat, though deep underground, is furnishing the oxygen from itself and that the process gives off considerable heat.

Chemicals as Fire Hazards

Dangerous chemicals are frequently met in everyday life, for although these materials are ordinarily quite safe, they may be potential fire hazards or be dangerous during a fire. The hazardous properties of liquids may be classified according to:

1. Volatility—the rapidity with which the substance evaporates into the air.
2. Ignition temperature — at which the vapors take fire.
3. Flammable or explosion limits — the concentrations in air at which the substance will burn or explode.
4. Combustion intensity — amount of heat given off when the substance burns.
5. Vapor density—greater or less than air, vapors rise or cling to the floor.
6. Toxicity—the vapors may be poisonous.
7. Nature of the products of combustion — these gases may be poisonous or irritating.

There are a number of very volatile substances which are frequently met. The most common is petroleum naphtha for home dry cleaning. When one considers the loss of life, painful injuries and property damage due to fires caused from this source it would seem that some regulation, or at least some educational instructions should surround the sale of this liquid. The most common sources of ignition are static electricity and outside flames. Whenever the fabric, and especially silk, is rubbed on a dissimilar material, static electricity is formed, and if a spark jumps the naphtha is ignited. When naphtha vaporizes the vapors are heavier than air and remain along the floor, spreading slowly. If an open flame is present, even at some seemingly distant point, the vapors may reach this flame and flash back to the source of the vapors. Nothing can be done about this danger of dry cleaning naphtha except to educate the users to extreme caution. The only absolutely nonflammable material which is suitable is carbon tetrachloride. It is possible to use a mixture of petroleum naphtha and carbon tetrachloride, a 50 per cent mixture will not ignite by sparking and will not readily burn. Other volatile solvents as ether, carbon disulphide, lacquer solvents and paint thinners are frequently met and contribute their share of preventable fires.

A number of solid chemicals are found to be sources of danger. Sodium and calcium chlorates are extensively used to kill weeds. A solution of these salts is sprayed over the weeds, which die, dry out and become a fire hazard. Although the chlorates are not flammable by themselves, and can be safely stored in metal containers, when the chlorate is brought in contact with organic materials, an easy ignition and rapid combustion may occur. This mixture is even more dangerous than gasoline, since it can be ignited by friction and shock as well as by spark. Serious injury has resulted to persons whose clothing has been soaked with such solutions and then allowed to dry, as the dry cloth has flashed into flames.

Hazards of Refrigeration Systems

Refrigeration systems offer a source of danger. A wide variety of gases are used in these systems, some of which are flammable, while others are irritants and toxic. Propane and the butanes are very flammable, methyl and ethyl chlorides are explosive and flammable, producing irritating vapors of hydrochloric acid gas, ammonia is an irritant and also explosive, sulphur dioxide is extremely irritating and toxic. Ammonia is invariably used

in the large refrigeration systems and its properties and action are well enough known to permit it to be handled correctly. Large apartment house systems may contain any of the other gases. Masks must be used when toxic gases are present, and the presence of these flammable and explosive gases must be regarded as risks in fighting such fires.

Incendiary Mixtures

The fire losses due to incendiarism are extremely high. Of course many of these fires are set by the old fashioned method of using an oil can and a match. However, there are many professionals in this field who stoop to nothing as common as this method. There are a number of chemicals which may be used for this purpose with positive results. White phosphorous is the substance used in most incendiary bombs to cause the ignition. White phosphorous takes fire spontaneously on exposure to air; however, the flame is of a relatively low temperature and is not sustained long enough to cause ignition of the material to be burned unless it is very flammable. For this reason the phosphorous is usually dissolved in carbon disulphide, in which it is extremely soluble. By adding other oils and chemicals which are miscible with the solution, as fuel oil, coal-tar, T.N.T., a spontaneously flammable liquid, is produced. By varying the proportions of the constituents the ignition can be made to occur almost instantaneously upon exposure or after aconsiderable delay.

Thermite is a mixture of aluminum powder and iron oxide which produces an enormous amount of heat on ignition. Molten iron is produced in the reaction and this can penetrate metal and prolong the incendiary action. More effective results are obtained when some readily ignited oil or rosin accompanies the thermite.

Many other mixtures are used for incendiarism and the professional is quite ingenious in the mixtures he can produce. Many of the ingredients have no value in the mixture, but results are secured notwithstanding. Mixtures of chlorates or nitrates with organic compounds and set off by sulphuric acid; sodium peroxide and organic materials; aluminum and magnesium powders with chlorates; calcium carbide and sodium for reaction with water, these are just some of the mixtures produced for this evil business.

Chemical Products from Fires

Fortunately we are able to fight chemical with chemical, though the number when they are of value in fighting fires is very small in comparison with those flammable substances. Water is so common and its action so well known that mention need only be made. Water does all things a good fire extinguisher need do.

It is possible to add certain chemical compounds to the water and this solution will be much more effective against oil fires. Although potassium nitrate is an ingredient of explosives and incendiary mixtures, a 20 per cent water solution of this salt will extinguish a fire more rapidly than carbon tetrachloride. Water is not so effective against certain classes of fires, so other chemicals must be employed.

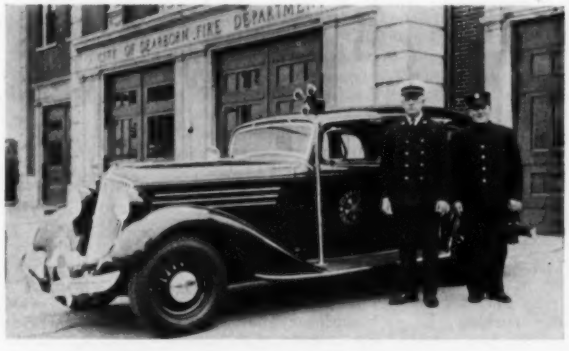
Carbon tetrachloride is perhaps the next best known chemical agent. Unfortunately, pure carbon tetrachloride has a freezing point of —10° F., whereas most specifications call for a freezing point of —50° F. It is not generally specified what agent shall be added to the carbon tetrachloride to reduce the freezing point. Various substances have been added, the best one is chloroform, but petroleum distillate and turpentine have been added. On the coast it is much safer and much cheaper to use pure carbon tetrachloride, though state inspectors have regarded with distrust the pure chemical. When the extinguisher fluid is forced on the fire an evaporation takes place, so the fire is put out by the same effects as with water. The vapors of carbon tetrachloride are much denser than air and cling to the ground, whereas steam is lighter than air and rises. Carbon tetrachloride undergoes reaction with the air, the steam and other hot materials present. The gases given off by these reactions are toxic and death has been caused by them. Phosgene, one of the toxic war gases, is formed in large enough quantities to be poisonous; chlorine, another war gas, is found in smaller amounts; and hydrochloric acid gas, an irritating and poisonous gas is also formed. The vapors of carbon tetrachloride itself are harmful. One might fear to use a carbon tetrachloride extinguisher, but ill effects can only occur when it must be used in close quarters and the person must remain exposed to the gases formed. It must be impressed upon persons using this type of extinguisher that they must leave the fumes formed or ill effects may follow.

Gases Found When Textile Materials Burn

Some of the gases formed when textile materials burn or are heated to the decomposition temperature must be called to the attention of those who must be exposed to these fumes. Of the textile materials, cotton and rayon produce the least toxic gases; carbon monoxide is formed in considerable amount when these materials decompose on heating in the absence of air. Silk and especially woolen materials give off such deadly gases as hydrocyanic acid gas, hydrogen sulphide, sulphur dioxide, ammonia, and carbon monoxide when these textiles are heated in the absence of air. In combustion with an excess of air, little or no toxic gas is given off, but one should be ever on the alert against these toxic gases and should recognize the conditions under which they can form.

Recognition of the principles involved in combustion allows the applications of counter-actions to prevent uncontrolled combustion. These chemical principles aided in the construction of the modern equipment used to fight fires involving special materials. The man who understands these principles and the materials can fight these fires much more intelligently.

(Excerpts from a paper read before the annual convention of the Washington State Association of Fire Chiefs.)



Chief R. E. Mottesheard With His New Car

A new chief's car has been provided for the use of Chief R. E. Mottesheard, Dearborn, Mich. It is equipped with radio, siren, bell, whistle and Roto Ray light. The car is capable of a speed of one hundred miles an hour. Chief Mottesheard is shown with his driver.

THE ROUND TABLE

For Practical Discussion of Current Fire Department and Fire Management Problems

COMPENSATION FOR VOLUNTEER FIREMEN

VOLUNTEER firemen serve many masters. They are serving their desire to be of help to their fellow men, they are working for the betterment of their community, and they are fulfilling their desire for social contact.

Being volunteer firemen calls for many sacrifices. They must devote many evenings to drills that they may become proficient in the use of tools and equipment. They must also forget selfish desires when the fire alarm sounds, and place fire duty above all other tasks.

It is therefore not unreasonable to pay these men a small amount each year to help pay for the clothes which they ruin while fighting fires. Unlike the men of paid departments they are not prepared for fires. They answer the alarm while wearing their work clothes or while attired in their "Sunday best."

The problem in full which is discussed in this issue is printed in the box on this page. It is a continuation of the one published in the previous issue. In the box on the following page is the question that will be treated in the next issue. Should you have some comments that you would like to add to the next discussion, you are invited to write to the "Round Table Editor," FIRE ENGINEERING, 24 W. 40th Street, New York, N. Y.

Discussion of the Question

Howard B. Harrington, Chief, Baldwinsville, N. Y.: Our department consists of twelve regularly appointed men, divided and paid as follows: Chief, $85 annually; Assistant Chief $75, annually; 10 men, $60, annually.

The question has often arisen as to whether we are a volunteer or a paid department but I still maintain that we are a volunteer company, that in the strict sense of the word, we are all call men due to the fact that no one is on duty at fire headquarters.

As to special fire fighters whom we may draft at a serious fire or should we at any time become shorthanded, they usually serve gratis and look upon it as a "Good Samaritan" act. Years ago they were paid a small sum in appreciation of their good work.

Occasionally we answer a call outside the village limits for which no added compensation is received. It is a matter of the "golden rule" in this respect, though a donation of $10 or sometimes $25 has been received in appreciation of services rendered. Such gifts usually go into the "Fire Fund" of the village budget. However, there is no fixed charge for responding to an outside call, it being left up to the Chief to decide immediately as to whether the call shall or shall not be answered. His verdict depends upon conditions and water supply, etc., at the fire. In the past, on one or two occasions, a check was received from neighboring hamlets. The Village Board discussed what disposition to make of the money with the result that the village took twenty-five per cent and the remaining 75 per cent was equally divided among the 12 men of the department.

Our department members are appointed and sworn in each year at the first meeting of the village fiscal year; thus appointments are controlled by the village "in view of the pay granted."

J. H. Patrick, Chief, Laramie, Wyo.: We list the volunteer firemen on our pay roll as reserve firemen. The city pays these men one dollar per hour or fraction thereof, for all calls, and one dollar per hour for all drills.

In addition to our reserve men, we have regularly appointed night men, who receive compensation of $100 per year, together with their sleeping quarters and other accommodations.

The paid personnel of the department, consisting of ten full-time men, working on a two-platoon system, are under Civil Service. The total strength of the department is ten full paid men, 28 reserve men, and 5 night men.

The reserve and night personnel are selected by the department, and admission to the ranks is by a majority vote of all membership. The city does not in any way attempt to control the selection; they do, however, administer the oath of office to all membership.

Raymond E. Shields, Chief, Rural Fire District, Gilroy, Cal.: We are an incorporated fire district formed for the protection of the rural residents of Gilroy and neighboring communities within the fire districts.

We have one man on full time pay and a relief man who is on part time. We have six men who are paid $1.50 per call, and are all insured against accidents. If we find that the fire requires more men than our regular crew, we have made arrangements with the State Division of Forestry, which has two crews within fifteen miles of our headquarters, to supply us with as many men as the need may call for.

The Chief recommends the men to the Board of Fire Commissioners for fire work and they pass on the applicants.

We have a Seagrave 500-gallon pumper converted into a rural unit. On this truck we have besides the 500-gallon pump, a 400-gallon water tank with a booster pump that can be used while the truck is in motion or standing at a fire. This small pump is very satisfactory especially on small grass fires or roadside fires, or for small building fires that don't require a great amount of water. We carry two one-inch lines attached to the booster at all times. Besides the Seagrave we have a Dodge pick-up with a 65-gallon soda and acid tank on it that we use for an auxiliary truck. Both trucks are equipped with back pumps and tools for fighting grass and hill fires. The grass and hill fires are the type of fire that we are called upon to fight from about April 15 to October 15, which is a dry time of the year for this part of the country.

H. J. Keeler, Chief, Canisteo, N. Y.: Our volunteer firemen receive no pay. We have no call men. Watchmen at fires are paid 40 cents per hour. No compensation is made for outside calls. Our village makes no attempt to con-

HERE IS THE PROBLEM

What pay, if any, do your volunteer firemen receive? Call men? Special fire fighters drafted at the fire?

How are these men paid when responding to calls outside the city limits?

In view of the pay granted, does the village attempt to determine who shall join the fire department?

trol the membership of our volunteer firemen.

Verne Stockholm, Chief, Dinuba, Cal.: We have three paid men on 24-hour duty and 12 volunteers. The city pays the volunteer organization $25 per fire when water is used through the pumper. Out of this amount each volunteer that reports to the officer in charge and remains until dismissed by him receives $2 and the balance goes into a fund. When outsiders were engaged at a fire, they were paid 40 cents per hour.

This city no longer recognizes any calls outside the city and if any of the members respond to such a call, they do so entirely on their own accord,

The hiring of paid men is done by the City Council but the selection of volunteers is entirely up to the volunteers themselves, as is the selection of all the officers, including the Chief.

Larry F. Donovan, Secretary, Fire Dept., Urbana, Ohio: This department operates city and rural fire protection with three companies. We operate under a platoon system of five men on and five off, and Chief. We also have a volunteer system of ten men who receive one to three dollars for each fire depending upon the judgment of the Chief. Special fire-fighters drafted into service receive the same pay as volunteers.

The Community Department operates as a unit of the Urbana Fire Department and answers alarms only to the rural district. The city furnishes two paid men and volunteers who help are paid two dollars a fire. The Community Department collected $10,000 and paid all rural bills. The city furnishes men, and houses apparatus for use in case of necessity. We have over 375 subscribers in rural service and charge $50 an hour for non-members. The City Council leaves all appointments up to the Chief. Off day men are notified of rural fires and respond, and in turn are paid extra for this service. This money is taken from the Community Fund. We have about four volunteers who receive no pay. They are well-fixed financially, have alarm systems in their homes, and practice with the paid department. They also contribute to all expense of the department.

Earl B. Reeves, Chief Engineer, Contana, Cal.: Our department consists of full paid and call men. The call men are drilled twice each month and receive $1.25 for a two-hour drill, and on fire calls they receive $1.25 for the first hour or any portion of the hour, and one dollar an hour thereafter. These call men and their cars are covered with insurance while answering an alarm, while working at a fire, returing from a fire, or while drilling.

We try to avoid outside calls as much as possible, but if we are called outside of the district the men would be paid the same as for calls within our district.

All call men are required to pass a written examination. The applicant must also pass a physical examination, which consists of the following: Hand vault, chest, chin and eye height; climb ladder with 100-pound sack on shoulder, 6 rungs; climb under side of ladder using hands only, 10 rungs—and down the same way; 100 yard dash, 12 to 14 seconds, and running broad jump.

Providing the applicant passes these tests, he comes before the members of the department and is voted on as to whether he is the right type of a man socially to become a member of the department. This finished he then has to pass a doctor's examination, and then goes on the waiting list to await his regular appointment. The age limit is 21-40 years of age.

Percy G. Snelling, Ex-Chief, Carmel, N. Y.: Our department is entirely volunteer, the members paying dues of three dollars per year. During this period of unemployment many members have been behind in their dues, and to offset any question as to their standing in case of injury, I called on them for duty at the fire-house on several stormy and severely cold nights during the past winter, for which duty they were credited with dues to the amount of three dollars per night. This not only kept many excellent men in good standing, but it gave me an officer, an operator, and three or four men to get a good jump on a fire. Although we had no calls on these nights. we were ready for them, and it relieved me of some worry. The men had a taste of real night duty which was good experience for them.

We have never had occasion to draft men at a fire and no provision is made for payment for such service.

Voluntary contributions to the departments funds are our only recompense for calls outside our district. We have received checks up to $100 for such calls.

The Fire Commissioners of our district approve new members and elective officers with no attempt to arbitrarily control the membership. In five and one half years as Chief the Commissioners gave me the best of cooperation, limited only by the amount of funds available.

Aaron Baker, Chief, Coalinga, Cal.: Our Fire Department has its own organization consisting of Chief, Assistant Chief, two full time drivers, and one call man. Their salaries are $50, $25, $155, and $15 respectively. We also have 10 volunteer firemen. All the paid men receive their compensation monthly and the organization itself receives $75 a month from the city to use as it sees fit. Five dollars per month is paid to each volunteer and the balance of $25 goes to the Firemen's Fund.

We haven't called on any special fire fighters, but if we did the city would pay them the laborer's wage of $5 per day.

The men volunteer their services when answering a call outside the city and any donations are deposited in the Firemen's Fund.

The City Council leaves it up to the Firemen's Organization to elect or reject its members. The city also carries Compensation Insurance for all members of the department. In the 10 years that the department has been in existence it has functioned very efficiently. We have one business meeting and three drills a month. Last year our fire loss was aproximately $4,000.

L. G. Edwards, Chief, Crockett, Cal.: Our department is wholly volunteer, no call men. The firemen receive no pay from the Fire District. Any donations received go into the Fire Department benefit fund. We have never had to draft special fire fighters but money is available from the District for any fire fighting expense.

In the matter of outside calls. For a neighboring town no charge is made as it is part of a mutual aid plan. For calls to unincorporated territory, a charge is made to the county. This money, too, goes into the benefit fund.

The employers of all of our firemen, pay the firemen their regular wages if their men are fighting fire during their regular working hours. The firemen are given the maximum insurance coverage, by the fire district, with the California State Accident Insurance Fund.

The Fire Commissioners can demand the expulsion of any fireman, after a trial, who is considered undesirable.

The Fire Department membership is 28; eight men including an Assistant Chief live in the firehouse. The apparatus consists of two combination pumpers and hose wagons, one double chemical and hose wagon and one engine fitted with booster tank and pump, also a 1,000-watt generator and flood lights and salvage equipment.

The turnover in membership is small, only three men having been with us less than five years and eight men less than ten years.

G. E. Hildred, Chief, Napoleon, Ohio: Volunteer firemen receive $2 for a call or for 2 hours time and one dollar per hour for time over 2 hours. Call men or special fire fighters drafted at a fire receive the same pay.

When responding to a fire outside the city limits the insurance company pays one-half the cost of fighting the fire and the owner of the property involved pays the other half.

Walter Briggs, Chief, Freehold, N. J.: All firemen in our department are volunteer and receive no compensation for fighting fires. Firemen who remain at the scene of the fire to prevent a new outbreak, after the department has left, are paid at the rate of $1 per hour. No pay is given firemen answering calls outside the Borough limits.

The Borough Council has no control over who shall

HERE IS THE PROBLEM FOR THE NEXT ISSUE

In what way have you found regional fire schools of benefit and how have you participated in them?

How have you found the state short courses of value to your men?

What are your suggestions for bettering the benefits obtained from the state and regional fire schools?

join the department, but all drivers, company officers and department officers are approved by the Borough Council.

Marvin Fisher, Chief, Delanco, N. J.: We haven't a paid man in this department which consists of one company in a township of approximately one square mile of a little less than 2,500 population and property of an assessed valuation of $1,250,000.

We never lack any extra help. In fact, we have to call on our police to clear the ground at times as untrained men are usually in the way.

With regard to outside calls, they are made with as much enthusiasm as any others, with no thought of pay, and if we need outside help it is given willingly by any company in the county. In one case we made a run of 20 miles joining 23 other companies in fighting a forest fire. Our men and apparatus were on the job from 7 p.m. until 6 a.m. There were companies from two counties at this fire and the pay was sandwiches and coffee.

We are under municipal control, governed by a Fire Commission of four men elected by the voters of the township. The Chief and other fire officers are elected by the active firemen. The Chief only is subject to the approval of the Commission. Our budget is made up by the men approved by the Commission and voted on by the residents. Bills for supplies, repairs, new equipment, etc., are paid by the Commission.

C. E. Sullivan, Chief, Avalon, Cal.: We have nine volunteers and they receive $8 per month. They are required to attend two drills weekly unless we have a fire and then drills are not held that week. There is no additional pay for outside calls. Men fighting fires receive their usual salary from their employers. The City Council grants me full power to hire or fire.

Should the men be absent from a drill, without a reasonable excuse, they are fined one dollar. Such fines are placed in the "Risk Fund" for the volunteers. They can borrow from it and pay back from this fund as the committee sees fit.

I have very good attendance at drills and very good discipline. The city cleans, repairs, or replaces any of the volunteers' clothing that is ruined while fighting fires.

Ed. M. Gates, Chief, Newton Falls, Ohio: Regular volunteer firemen are paid one dollar per hour for the time they are out. Men called on or those giving service voluntarily are not paid.

The village has a contract with township trustees by which the township pays $300 per year for protection in the township. As our village has no funds this $300 is all the pay our firemen have received in the past five years.

There was a time when responsible men asked to be taken on as members but now we have no requests and as Chief I do not like to ask any one to join simply because there are no funds to pay them. I have had little or no complaint from my men who have been members for a long period of time as we have very good equipment, a 1,000-gallon Seagrave pump, and they don't want to put it in inexperienced hands.

C. H. Dougal, Chief, Livingston, N. J.: We are strictly volunteer and receive no pay whatever. If we have a fire that needs watching one or two men are detailed to watch it as long as is necessary. These men are paid fifty cents an hour.

We are entirely under municipal control. Applications are received by the department, voted on, and if accepted they are presented to the Township Committee for approval. Then the man serves a six months' probationary period, after which, if he has met all requirements, he is voted on and again presented to the township committee for approval as an active fireman.

John Scheer, Chief, New Bremen, Ohio: There are 8 men who are able to handle the fire apparatus. They exercise or drill once a month for which they receive $2 a month. They receive no other pay at any time.

The city receives $25 for an outside call and 1 hour service, and $10 for every additional hour.

The village does not dictate who shall join the Fire Department. The Chief has the privilege to hire necessary help, but anyone can join the Fire Department.

Thomas Beard, Chief, Catawissa, Pa.: Firemen in this town receive no remuneration whatever, whether members of a company or drafted men, or whether fire is in or out of town. The town does not attempt to control membership of company.

Occasionally after a fire watchmen are placed on duty. In this case they are paid the prevailing labor rate, but there is little need for such work.

J. W. Laing, Chief, Coalport, Pa.: Our volunteer firemen receive no pay, except those drivers in cold weather. The fire company pays this. We receive nothing but abuse for outside calls because we are not more efficient. Some outsiders who always want help and never will pay to assist are the worst kickers. They seem to think we are duty bound to go anywhere to a fire, and pay our own expenses. The organization is controlled by the fire company and will continue to do so, as long as I am in office.

D. R. Roush, Chief, Pomeroy, Ohio: Firemen receive one dollar for fire calls, and seventy-five cents for each hour while out. We do not receive pay for calls outside city limits. Names of citizens joining the Fire Association are presented to the Council for their approval.

Chas. Schnell, Chief, Cranbury, N. J.: Our fire company is under the jurisdiction of a Township Committee, which pays each member $12 per year, and the Chief $18. However, this is not compulsory, and is merely given as an appreciation for the service rendered by the firemen.

We have no call men nor do we draft anyone for fire service. The men receive the same pay regardless of where they are called for duty. Although we charge a sum of $25 for all fires outside our district, this amount is put in our company treasury to be spent as we see fit.

The company itself has charge of who shall become members. Our company belongs to the State Relief Association and they set the amount of members which we are to carry on roll according to population, district, etc., that we cover.

L. R. Schwindler, Chief, Blasdell, N. Y.: This department was originally organized in 1905 and consisted of 20 members, who had to use the old time hand cart.

At no time has any firemen received compensation for his efforts and no individual has made any monetary gain resulting therefrom.

This department now consists of 65 members and we have a fully equipped fire engine to combat all fires. The expense for the operation and maintenance and equipment is borne by the village, but the department as as whole furnishes the uniforms and equipment in the hall, such as radio, pool table, and other forms of indoor pleasures

We are located in the town of Hamburg which, outside of Blasdell, maintains 2 departments for responding to all unprotected districts in the town. Our department is maintained by the villages and it does not have to leave the village limits. However, on different occasions, where it has been humanly possible, we have gone outside of our district, but did not receive, nor did we expect to receive, any compensation.

In the event that one of our members was injured or killed while responding to an alarm outside the village the cost would be borne by the town. If the accident occurred in the village our insurance would take care of it.

The Fire Department is governed by the village Water Board of three who are known as Fire Commissioners. They have our membership limited to 65. Any vacancies caused by death or otherwise are first filled by ballot in the department and in turn is sent to the Municipal or Water Board for approval. If approved, the names are placed on the roll as members. Any person desiring to become a member must sign an application blank and have 2 firemen in good standing sign same as vouchers. There is an initiation fee of $2, one dollar for his badge and key, and the other is placed in the treasury. The department has the first vote regarding any proposed member but final approval must come from the Water Board.

E. L. White, Chief, Barstow, Cal.: Members of the Barstow department receive no pay, and we have lots of men anxious to serve. Our nearest neighboring town with a Fire Department is 38 miles, but as we have only one piece of equipment, we do not go far from home.

Fred Frank, Chief, Atascadero, Cal.: One dollar is paid volunteer firemen in our department for every alarm.

The volunteers elect their own members, sanctioned by Fire Commissioners, this being a fire district rather than an incorporated city.

Frank Timmers, Chief, Sebring, Ohio: We have eighteen men, all volunteers, in our company. Each man answering an alarm is paid one dollar per hour (or for any part of an hour).

When responding to alarms outside of city limit the wages are the same as in the limits. The rural community has for the most part taken out fire department

insurance. Therefore our wages on an out of town alarm are guaranteed.

S. W. Ranger, Secty., Fire Dept., El Monte, Cal.: This Fire Department receives $4 per month per man. It has one call man (24 hours) at $150 per month. Should special fire fighters be required they are not paid. We receive nothing for "outside city calls."

This city does not attempt to control who shall join the department. It is done entirely by the department.

R. S. Mack, Chief, Derry, Pa.: Our department is comprised entirely of volunteers and they receive no pay whatsoever. Carnivals, supported by citizens of Derry, have made it possible to buy an American-LaFrance 600-gallon pumper with extra equipment, $9,000, 1 house and lot $10,000, one-half of the municipal building $18,000.

J. A. Wyatt, Chief, Arcata, Cal.: Members of the Fire Department receive no compensation for their service whether it be for a fire within the city limits or outside.

The City Council does not interfere with what the membership of the department does.

Frank Hubbard, Chief, Bay Shore, N. Y.: The volunteers receive no pay. Pick-ups are paid twenty-five cents an hour outside of fire district.

The State Conservation Commission pays the firemen for outside calls.

Robert C. Howe, Chief, Fort Bragg, Cal.: We pay our members $1 for all alarms answered whether within or outside the city limits. We do not use outsiders.

The city does not have anything to do with who joins the department. We have 24 members with two pumpers and a ladder truck.

W. W. Robinson, Chief, Fowler, Cal.: Our department consists of Chief, Assistant Chief, and eight firemen, who receive $10, $7.50, and $5 a month respectively. We are not allowed to draft men at fires. We also are not permitted to take the fire truck outside of the city limits. The city does not attempt to control who shall belong to the Fire Department. That is left up to the department.

C. W. Warner, Chief, Newcomerstown, Ohio: Firemen receive $2 for the first hour of service and one dollar per after the first hour. Drafted firemen receive one dollar per hour. Callmen are summoned by siren. We have no way of getting any pay for work outside city limits.

The Council and Chief say who shall join the department and who shall be dismissed.

D. A. Moore, Chief, Beaver, Pa.: For false alarm or "fire out" calls the firemen receive one dollar each just the same as for one-hour fires.

We have 29 fire companies in our county. Most boroughs and townships have signed working contract covering outside help: $2 per hour for Chief, $1.50 for 2 men operating pumper, one dollar per hour for all firemen, $10 per hour for pumper while pumping, $10 per run or for service of all other trucks.

C. R. Graham, Chief, Oberlin, Ohio: Regular volunteers receive $1.50 for the first hour and 75 cents for each additional hour. Substitute volunteers receive 50 cents per call. They receive the same pay as regulars on 2-hose line fires. We have two paid drivers and the Chief and Assistant Chief who receive $100 per year.

Same pay is made for outside calls as in city limits except that no call is turned in, but a few firemen are called by phone.

Volunteers are selected by the firemen and approved by the City Manager and Council.

Harry E. French, Jr., Chief, Hasbrouck Heights, N. J.: Volunteers receive $15 per year. No provisions are made for call men or drafted men. No payment whatsoever is made for outside calls. We have a cover up system, when a town is in need of aid they call on us, and we respond. The men in the department pass on new members and the Council confirms it.

John O. Ream, Chief, Berlin, Pa.: Volunteer firemen receive no pay for either outside calls or regular calls. The fire company casts a ballot for new members of the Fire Department.

Luther Hallet, Chief, Shadyside, Ohio: No compensation is paid to volunteers for work in connection with fire fighting, whether it be within the city limits or outside the limits.

The Chief has the authority to permit persons to join the Fire Department. The village carries insurance on the firemen.

Jas. Kotera, Chief, Neffs, Ohio: No pay is made for any fire calls. The volunteer Fire Department appoints new members as they are needed.

J. D. Morehouse, Chief, Brewston, N. Y.: Our volunteer firemen receive no pay for their services, in any way except in a few cases where a small donation was made for calls outside of the village. This was used for a relief fund, the men received nothing personally.

George L. Benner, Chief, Curwensville, Pa.: Each member pays one dollar per year dues for the privilege of membership in the Fire Department. No pay whatsoever is made to volunteer firemen.

Dean Whited, Chief, Barnesboro, Pa.: No pay is made to volunteer firemen. Calls outside the city limits are made by the supervisors of the towns aided and also by donations.

C. C. Keith, Chief, Bellwood, Pa.: No pay at all is given to any men for fighting fires. The village has nothing to do with any one joining the Fire Department.

Arthur R. Seyferlich Dead

"A one legged fireman is no fireman at all," and firm in that belief, Arthur R. Seyferlich, Fire Commissioner of Chicago, refused to have a leg amputated in an effort to save his life. He died on November 30 at the age of sixty-four as the result of diabetic gangrene.

He was taken to the Henrotin Hospital ten days previous and was told his only chance depended on the amputation of his leg. He refused to grant permission. Chief Seyferlich received two blood transfusions and appeared to rally for a while. With him when he died were his son, Arthur, a nephew and his three chauffeurs.

The Late A. R. Seyferlich

Chief Seyferlich was born in Chicago, and when he was twenty-three years old he joined the Fire Department. He was advanced to Lieutenant five years later; became Captain in 1904; Battalion Chief in 1908; Assistant Fire Marshal in 1911, and then he was appointed Marshal by Mayor Thompson. He was demoted to Assistant Fire Marshal by the next mayor and restored to his post the following year. In 1927 he resigned rather than submit to demotion because of politics. One of the first acts of the late Mayor Anton J. Cermak was to appoint Mr. Seyferlich as Fire Commissioner.

Chief Russell, of Kalamazoo, Dead

Chief Charles Russell, seventy-three years old, and considered the oldest Chief in Michigan, died following over fifty years' service in Kalamazoo. He had served nearly fifty years in the Fire Department and two years in the Sheriff's office.

He had had a severe attack of influenza which was followed by complications. He had been ill for several weeks.

Chief Russell was a Past-President of the Michigan State Firemen's Association and this year was elected Second Vice-President of the Michigan State Fire Chiefs' Association.

Funeral services were conducted by the Knights Templar, of which he was a member of long standing.

Fire Prevention Club Formed at Malden

Members of fire prevention bureaus in the eastern part of Massachusetts held a meeting at Malden, Mass., to form the Fire Prevention Club. Deputy Chief A. E. Miller was elected President; Capt. C. F. Bell, Brockton, Vice-President; Chief Thomas J. McCarrick, Revere, Secretary, and Deputy Chief Peter J. Creedon, Quincy, Treasurer. A. N. Miner, Chairman, Massachusetts Fire Prevention Association, explained new fuel oil regulations. There was considerable discussion on the subject of "bootleg" oil storage tanks, fees for permits, and sale of range oil burners.

Questions and Answers

NOTE—Readers are invited to send in questions, which will be answered in the order received. Names are omitted from questions unless otherwise specified

Fire From Steam Pipes

To the Editor:

Will hot steam pipes, when in contact with wood floors or any burnable substances, start a fire? I contend that they will. I would, however, like your opinion. C. C.

Answer: Yes, steam pipes may eventually cause fire when in contact with wood floors or any similar carbonaceous material. The process is as follows: The wood gradually chars and when this charring has advanced to a sufficient stage, the rapid heating and cooling of the charcoal by the heat being turned on and off may result in the ignition of the material.

There are quite a number of fires on record contributable to steam pipes being in contact with wood floors.

Sprinklers on Steamships

To the Editor:

Would like to inquire concerning the advisability of installing automatic sprinklers on board passenger carrying ocean going ships, the sprinkler system to be installed throughout the boat the same as in a factory.

Due to the vibration, the twisting, etc., of a boat could there be installed pipe fittings which would allow for this twisting, etc? Also, is there, or could there be, an automatic arrangement by which a fire pump of sufficient capacity would immediately start functioning and maintain a set pressure without the continuous supervision of an attendant, or at least for a brief period until the officer in charge could reach his station and of course electric alarm bells would start ringing as soon as the sprinklers started working?

Would the salt water or atmosphere cause the sprinkler heads to deteriorate or become useless after a certain length of time? L. B. H.

Answer: There should be no reason why automatic sprinklers could not be installed aboard ocean going ships, provided they were properly protected against freezing.

There should be no danger of pipe loosening up from vibration or from twisting, because all modern steamships have plumbing throughout and certainly the piping supplying water to the various cabins is no more sturdy than sprinkler installations.

With reference to an automatic arrangement by which a fire pump could start functioning, such is not only possible but practicable. Either a dry pipe valve on the sprinkler system or a flow control valve could throw in the necessary mechanisms to start operation of pumps, provided steam pressure or electric power were available at all times, which is the case in practically all steamships.

Salt water or atmosphere found aboard boats should not deteriorate sprinkler systems, if they were designed for this particular type of service.

Nozzle Pressure

To the Editor:

Two engines at 100 lbs. pressure are pumping through parallel lines of 2½-inch hose, each 300 feet in length to a siamese connection to which is connected 200 feet of 2½-inch hose equipped with a 1¼-inch nozzle. Please explain how nozzle pressure is found. L. R.

Answer: First combine the two 300 foot lines of 2½-inch hose into a single line. This is done by dividing the 300 by 3.6, giving us 83.3 feet of 2½-inch hose. In other words, this line of 2½-inch hose 83.3 feet in length has the same friction loss as two parallel lines of 300 feet of hose (2½-inch) where the flow through the single line is the same as that through the two lines combined.

Add this 83.3 to the 200 feet of 2½-inch hose in the single line and then you have a total length of hose in the line of 283.3 feet. In other words, the layout is, from a friction loss standpoint, equivalent to a single line of 2½-inh hose of 283.3 feet in length and equipped with 1¼-inch nozzle.

The nozzle pressure is found by the following formula known as the Underwriters' formula:

$N.P. = E.P. \div (1.1 + K\ L)$.

Where K is the factor depending upon the hose and nozzle diameters and is, for 2½-inch hose equipped with 1¼-inch nozzle, .248.

L is the number of 50 foot lengths in the line and is equal to 283.5 ÷ 50, or 5.666.

The nozzle pressure $= 100 \div (1.1 + .248 \times 5.666)$.
$= 100 \div (1.1 + 1.405)$.
$= 100 \div 2.505$, or 39.9, or 40 pounds

approximately. This 40 pounds is the nozzle where the engine pressure at each engine is 100 pounds in the layout you give.

Placing Extension Ladders

To the Editor:

In a recent issue of FIRE ENGINEERING you have an answer in regard to the position of a fly ladder when extended and set against a building. You state that the fly should be placed on the outside away from the building.

For the sake of information I wish to call your attention to a few facts. The truss side of a ladder should go next to the wall (in cases where the rung of the ladder is not in the center of the beam) and one make of ladder has a rung missing on the fly, near the bottom of the fly. If the ladder is placed out the men have to step through the fly to reach the rung on the bed ladder. Do you think that is safe and practical?

In an issue of FIRE ENGINEERING a number of years ago, you had a picture of a building on fire and under the picture was a caption "What is Wrong with This Picture?" The ladders raised to the third floor were raised with the deep side of the truss and the fly to the outside. The correction was "the ladders are not raised and set in the proper manner."

Our men are taught to climb by the beam but how about the departments that say climb by the rung? The off-set in the ladder caused by the extended fly would not be a handicap to this type of climb. We do not find that the off-set interferes with the beam climb.

How many times did you ever see a man slide down a fifty foot extension ladder? R. R. J.

Answer: There is soundness in your argument particularly where a missing rung on the fly, near the bottom of the fly, is found in the ladders provided by the manufacturer.

As far as the placement of a truss extension ladder is concerned, the weakest part of the ladder would be the joint or over-lap. For that reason it is not necessary to place the truss to give its maximum strength, for the truss part will not give first.

In order to make sure that we were not merely giving the practice of the New York Fire Department in answering the

question, we have recently reviewed the placement of ladders in photographs of fires throughout the country, wherein over two hundred extension ladders were employed. In this entire lot, but one instance was noted where a ladder was placed in the manner suggested by yourself. This was a small extension ladder, possibly 45 feet. In every other instance, the extension ladder was so placed that the fly was away from the building, that is, it rested on the top of the beam ladder.

MASSACHUSETTS FIRE CHIEFS' CLUB HOLDS MONTHLY MEETING IN BOSTON

Need Urged for More Severe Penalties for Those Sending in False Alarms—Portrait Being Painted of Ex-Chief Dougherty

By Harry Belknap

THE Massachusetts Fire Chiefs' Club held a luncheon-meeting at the Parker House, Boston, on November 21 with M. Norcross Stratton, of the Division of Vocational Training, Massachusetts State Department of Education, as the principal speaker.

Among the guests present at the meeting were Fire Commissioner George W. Good, Brookline; A. Peter Lambert, Everett; Chief R. A. Magee, of Truro; H. R. Tyler, Truro; and Fire Commissioners A. L. Prince, J. A. Broderick, and C. Guerin, of Manchester, N. H.

Ex-Chief William A. Collins, Holliston; Ex-Chief John Baldwin, North Easton; and Ex-Chief Irving F. Patt, Central Falls, R. I., were elected honorary life members of the club; and the following were elected honorary members: Robert Small, Director of Vocational Training, Massachusetts Department of Education; M. Norcross Stratton, Supervisor of Vocational Training; and Samuel A. York, State Commissioner of Conservation.

A resolution was adopted on the death of Robert Many, Vice-President of the Fabric Fire Hose Company.

The club voted to endorse a letter written by Fire Commissioner Edward F. McLaughlin, of Boston, to be sent to all judges and district attorneys in the state of Massachusetts calling attention to the growing false alarm menace and urging the infliction of more severe penalties upon all convicted offenders.

It was voted to hold a Christmas party for ladies and guests at the December meeting and to invite the Police Chiefs' Association to hold a joint meeting with the club in January.

Commissioner York made a short address, in which he stated that he was proud of the success of the forest fire wardens' associations.

Mr. Stratton told of the progress of the firemen's training classes and said that three new schools had been started this year, making thirteen in all now in operation. The new schools are in Attleboro, Fitchburg, and Truro. Ten "smoke houses" have been built for demonstration of ventilation and an instructors' manual has been prepared. The Watchmen's School was atended by 398 men and is being supplemented by a course in first aid methods. Mr. Stratton said that Maine is now holding training classes for firemen, New Hampshire is organizing zone schools, and Vermont is considering the matter of organizing similar classes.

Announcement was made of the annual Farm and Rural Fire Protection Conference to be held in Worcester on January 11, at which the subjects of radio fire alarms, use of water holes, and salvage work will be discussed.

Among those who spoke briefly or took part in discussion of various topics were: Chief Herbert C. Root, Springfield; Chief William C. Mahoney, Peabody; Chief Charles L. McCarthy, Worcester; Chief Henry A. Fox, Boston; Chief John W. O'Hearn, Watertown; Chief Selden R. Allen, Brookline; Chief George L. Johnson, Waltham; Chief James Warnock, Swampscott; Assistant Fire Warden John P. Crowe, Westboro; John Campbell, of the Edison Electric Illuminating Company; Superintendent Peter E. Walsh, Boston Protective Department; Chief Ray D. Wells, Falmouth; and Chief Daniel B. Tierney, Arlington.

The question of the right of fire apparatus to enter one way streets against traffic was discussed and referred to the Legislative Committee. It was suggested that an amendment specifically drawn up to cover the situation might be needed.

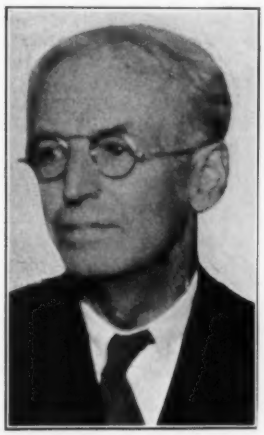
Ex-Asst. Chief Dougherty, of the New York Fire Department and Representative Ullendorf spoke briefly. Chief Richard A. Magee, of Truro, announced that arrangements have been made to have Mrs. Esther de Falconette paint a portrait in oil of Chief Dougherty, which will be presented to the Fire Chiefs' Club.

P. C. Charnock, of the New England Insurance Exchange, reported for the Committee on False Alarms. Other members of the committee are Chief Allen, of Brookline; Chief Fox, Boston; Chief Johnson, of Waltham; and Chief Dahill, New Bedford. It was voted to hold one half of the meetings in Worcester.

Chief Ingold, of Edgewater, Dead

William F. Ingold, Chief of the Edgewater, N. J., Fire Department since it was formed in 1916, died at his home at the age of fifty-six. He had been ill for over a year.

He is survived by his widow, his mother, a daughter and two sons.



The Late Chief W. F. Ingold

Private services were conducted by the Hackensack Lodge of Elks and the Whitehead Lodge, F. and A. M. Interment was at the Brookside Cemetery, Englewood.

Delegations were present from Cliffside, North Bergen, Weehawken, Guttenberg, West New York, Union City, Englewood, and Teaneck, together with a large delegation from the New Jersey State Fire Chief Association, headed by Chief John J. Towey, Chief of Newark, N. J., and President of the International Association of Fire Chiefs.

Among those present were Chiefs Charles A. McGinley, East Orange; Charles Friedel, Jr., Union City; John J. Gilday, Hoboken; M. J. Kenday, West Orange; J. D. Hayes, Milltown; John J. Cullinan, Morristown; James T. Keegan, Superintendent, Salvage Corps, Newark; J. H. Green, General Manager, Eureka Fire Hose Division, New York; Fred Bensen, Ahrens-Fox Fire Engine Company, New York; I. H. Case, General Manager, FIRE ENGINEERING, and A. B. Brown, New York.

A 600-gallon Mack triple combination pumper has been purchased by Springdale, Pa.

Bridgeport, Conn., voted to purchase a 600-gallon Mack pumper to be located at No. 5 station. Several other units will be relocated.

An Illustrious Family of Fire Fighters

Here are the three fire-fighting Heffernans of the New York Fire Department. From left to right they are Battalion Chief William J. Heffernan, who was recently advanced to that rank, Deputy Chief James W. Heffernan, and Fireman J. Heffernan, chauffeur for the Deputy Chief. The father, Deputy Chief Heffernan, is in charge of the lower Manhattan district, from Houston Street to the Battery, river to river.

WM. JEROME DALY

Jacksonville Has a 4-Alarm Fire

Explosions from cold storage apparatus, and a strong wind aided in the spread of a fire which started in a Jacksonville, Fla., building occupied by fruit companies. Two buildings were destroyed by the 4-alarm blaze.

Fire originated in a charcoal pot on the rear platform of a fruit produce building. It was fanned by a strong wind to a large blaze. The first alarm was received at 2:58 p.m., and brought out three engine companies, two truck companies and two high pressure hose companies in command of Chief W. Q. Dowling and Asst. Chief A. W. Dapson. Chief Dowling immediately ordered third and fourth alarms which summoned six additional engines and one additional ladder in charge of Asst. Chief E. A. Perry. The off-shift was called to duty. Deputy Chief G. E. Hare and Asst. Chief J. B. Chancey responded on this signal.

Fourteen lines were placed in the front of the burning buildings, and eight lines on the sides and rear. The hose

Many Hose Streams Were Used in Battling this Four-Alarm Fire at Jacksonville, Fla.

lines were supplied by engines and the high pressure system pumping at its maximum capacity.

Three refrigerated cars on tracks at the rear of the two flaming buildings were destroyed. Ten others were moved away by switch engines before they were damaged.

Ex-Chief Haney was on hand to watch the fire. Sailors from the Destroyer Tillman, which had arrived in the morning, aided the firemen with the hose and assisted in holding back the curious.

The fire was considered under control in less than two hours but not before four persons were injured, including a Captain who suffered a fractured pelvis and a fireman who received minor injuries. D. G. AID.

Explosion Wrecks Stores in Newberry

A series of explosions in a hardware store in Newberry, S. C., caused the death of three persons, excessive damage to adjoining buildings, and started a fire which was checked through the good work of Chief Henry B. Wells and the volunteer Fire Department.

The cause of the blasts which began at 6:15 p.m., November 16, is not known. The store burst into flame. It was impossible to enter the building to remove the bodies of the ones known to be seriously injured or killed. It was not until 10:30 p.m. that the flames began to subside, and it was midnight before the embers had cooled sufficiently to permit firemen to search for the bodies. The bodies were burned beyond recognition.

Newberry firemen were assisted by firemen from West End. Mayor Earhardt in commenting on the work of the firemen said, "The whole situation was admirably handled and no paid Fire Department in any city could have excelled the splendid work done by Newberry's volunteer firemen. Chief Wells and his men deserve the highest commendation."

WHAT'S BURNING?

THE following list includes fires of $50,000 loss and over in the United States and Canada, for the month of November, 1934. These figures, compiled from the telegraphic reports are based on estimates made at the time, and are subject to later investigation and consequent revision. Taken as a whole, however, they are an approximately correct view of the losses incurred. The figures represent loss in thousands of dollars.

Month Ending November 30	Loss in Thousands of Dollars
Caraway, Ark.—Stave factory of Allen Cooperage Co., destroyed	50
Dallas, Tex.—Business bldg. at 1006 Commerce St., damaged	50
Kerens, Tex.—Warehouse of Kerens Warehouse Co.	50
N. Wilkesboro, N. C.—Spainhour-Sydnor bldg. adj. property	65
Winnipeg, Man.—Grandstand at Polo Park race track destroyed	50
San Francisco, Cal.—Lowell High School damaged	65
Astico, Wis.—Plant of Astico Milk Products Co., destroyed	50
Newport News, Va.—Chesapeake & Ohio grain elevator destroyed	1,500
Cherrytree, Pa.—Two stores and adj property	50
Luzerne, Pa.—Luzerne National Bank bldg. adj. property	80
Thomaston, Ga.—Pruitt building destroyed	60
Rockaway Beach, N. Y.—Bldgs. of Murray Ice Co., adj. property	125
St. Paul, Minn.—Service headquarters of Goodrich Tire Co.	80
Watsontown, Pa.—Lyceum Theatre bldg. and adj. property	50
Jacksonville, Fla.—Business property in fruit district	160
Middletown, N. Y.—Residence of W. W. Bruyn, destroyed	80
Dallas, Tex.—Property of Textile, Inc., damaged	65
Newport News, Va.—Elevator of Chesapeake & Ohio R. R.	250
Sesser, Ill.—Property of Brewerton Coal Co., damaged	80
Roxbury, Mass.—Business property at 2222-37 Washington St.	50
Lucedale, Miss.—Property of Luce Packing Co., damaged	125
Charleston, Mass.—Navy yard building destroyed	125
Chicago, Ill.—Warehouse at 1234-36 Chicago Ave.	80
Watertown, N. Y.—Harrison Stores, Inc., and adj. property	125
Hiram, Ohio—Administration bldg. of Hiram College	100
Havana, Cuba—Thirty homes at Baracoa Beach	80
New York City—H. R. Drowne residence damaged	80
Moundsville, W. Va.—State Grocery destroyed	160
Fairmont, N. C.—Whse. of Lovill Joyce & Co., destroyed	50
Iron Mountain, Mich.—Gannon grocery destroyed	50
Newberry, S. C.—Store of Lominack Hardware Co.	80
Mariners Harbor, S. I., N. Y.—Pier of Shooter Is. Shipbuilding Co.	65
Havana, Ill.—Plant of Crescent Forge & Shovel Co.	80
Kulpmont, Pa.—Two school buildings destroyed	80
Florence, Ala.—Dye house of Cherry Cotton Mill	26
Paulsboro, N. J.—Paulsboro Shirt factory destroyed	50
Lebanon, Ohio—Grain elevator of Lewis & Drake, Inc.	50
Wichita Falls, Tex.—J. C. Penny Store bldg. destroyed	225
Harlingen, Tex.—Bldg. of Knapp Chevrolet Co., destroyed	35
St. James, Minn.—Business bldg. and adj. property	150
Northumberland, N. H.—Pulp mill of Wyoming Valley Paper Co.	65
Bristol, Va.—Plant of East Tennessee Light & Power Co.	175
St. Mary's, Pa.—Andrew Kaul Memorial Hospital destroyed	125
Rye, N. Y.—Residence of Geo. Palmer Putnam damaged	65
Chelan, Wash.—Whse. of Lake Chelan Fruit Growers	160
Medford, Ore.—Yard of Timber Products Co. destroyed	65
Phillipsburg, Pa.—Junior high school bldg. destroyed	100
Milton, Mass.—Dwelling of Howard Coonley, Brush Hill	50
Dunlo, Pa.—Centrally located business property	50

Protection of Ships at Sea

Peter C. Spence, Chief, Division of Fire Prevention, New York City, has written the following letter to a local newspaper, calling attention to measures that should be taken to prevent a disaster on American ships similar to the Morro Castle holocaust:

"Ships hereafter should be, if not fireproof, constructed of incombustible materials, and where such construction is not practicable, the combustible areas should be so restricted and protected by sprinklers that the hazards would be reduced to a minimum by erecting cut-offs.

"Nitrate film, chemicals, drugs, combustible as well as inflammable mixtures on board ship need proper protection.

"The drapes and hangings should be flame proofed in a manner similar to the treatment of the scenery in a theatre.

"Ships now in service could be made more fire-resisting at comparatively little expense. By means of a fire brigade properly organized and drilled, the safety of passengers could be assured in the event of accident.

"Fire fighting equipment, such as standpipes, extinguishers and fire extinguishing systems now on board should be under the fire guardians' meticulous care.

"The fire guardians should be experienced in fire prevention methods and have training to fit them particularly for this service.

"The safeguarding of ships from fire at sea is not an impossible task, and there are fire prevention experts well able to maintain safety on vessels under all conditions."

A 1,000-gallon pumper has been delivered to Joliet, Ill. It carries a 100-gallon booster tank.

Danville, Ill., will create a Board of Fire and Police Commissioners to consist of three members. No more than two members may belong to the same political party.

REDUCING HAZARDS OF EXPLOSION FROM DUST IN MANUFACTURING PLANTS

Safety Codes for Dust Explosion Prevention Have Been Adopted in Many Industries Where the Air is Unavoidably Laden with Dust Clouds

By David J. Price

Principal Engineer in Charge, Chemical Engineering Division, U. S. Department of Agriculture

THE Chemical Engineering Division of the Bureau of Chemistry and Soils of the United States Department of Agriculture has record of 573 dust explosions in plants handling or milling products principally of agricultural origin. In 189 of these explosions, 440 persons were killed and 891 were injured, making a total of 1,331 persons involved. In 461 cases the property damage amounted to $46,779,910.

Grain Elevators

The largest number of dust explosions have occurred in grain elevators and in connection with grain-handling operations. There have been 101 explosions in grain elevators. In 30 of these explosions 74 persons were killed, and 160 were injured. In 91 cases the total property damage reported was $15,879,150.

Flour Mills

There have been 81 dust explosions in flour mills. In 22 of the explosions in flour mills, 27 persons were killed, and 40 were injured. In 55 of these cases the property damage amounted to $4,387,900.

Feed and Cereal Mills

In feed and cereal mills there have been 75 dust explosions. In 30 of these explosions 53 persons have been killed and 183 injured. In 67 cases the property damage was $5,612,050.

Starch and Corn Products Plants

In starch and corn products plants 32 dust explosions have occurred. In 16 cases 128 people were killed and 123 were injured. In 27 cases the property damage was $5,095,850.

Wood Working Plants

There have been 70 dust explosions of wood dust in woodworking plants. In 30 of these explosions 26 persons were killed and 96 were injured. In 52 cases the property damage was $1,948,860.

Other Industries Affected

Dust explosions and resulting fires also have occurred in the following lines of industry: Cork handling plants, sugar refineries, malt houses, fertilizer plants, pulverized coal installations, bark grinding operations, sulphur grinding and handling, coffee and spice milling plants, metallic grinding and pulverizing operations, cotton and textile mills, paper manufactories, hard rubber recovery plants, phonograph record plants, resin handling and grinding, powdered milk plants, cocoa and chocolate plants, and rice mills.

Two hundred and fourteen explosions have occurred in these additional industries. In 61 cases 132 people were killed and 289 were injured. In 169 cases the property loss reported amounted to $13,856,100.

Economic Importance of Dust Explosion Prevention

There are approximately 28,000 industrial plants in the United States that are subject to the hazard of dust explosions. These plants normally employ 1,325,000 persons and manufacture products of an annual value of more than $10,000,000,000 (ten billion dollars). The extent of this industrial hazard indicates the economic importance of research on this problem.

Reduction in Dust Explosion Losses

A careful study of the reports of dust explosion investigations will show that:

(1) In the grain-handling industries the losses of both life and property as the result of dust explosions have decreased in recent years.

(2) Although a larger number of dust explosions are occurring each year, largely on account of the increase in number of industries affected, the effect of explosions is localized and limited in extent as the result of the application of methods of control and prevention.

In the period from 1921 to 1931 the average loss gradually decreased from approximately $520,000 in 1921 to about $28,000 in 1931, a net average reduction of approximately $500,000. The yearly losses have dropped from $4,160,000 in 1921 to $1,100,700 in 1931.

This marked reduction in dust explosion losses in the grain-handling and associated industries has been due in a large degree to the splendid cooperation which the Department of Agriculture has enjoyed with all the industries, organizations, and agencies engaged in explosion and fire prevention work. This cooperation has resulted in a definite saving of both life and property.

Safety Codes for Dust Explosion Prevention

One of the principal accomplishments in dust explosion control and prevention has been the development of safety codes by the Dust Explosion Hazards Committee of the National Fire Protection Association. This committee, composed of representatives from the industries directly concerned, and from insurance and safety organizations, State and Federal officials, and construction and equipment engineers, works under the leadership of the Bureau of Chemistry and Soils, United States Department of Agriculture.

The committee has prepared safety codes for the following:

1. Flour and feed mills
2. Sugar and cocoa pulverizing systems
3. Pulverized fuel installations
4. Terminal grain elevators
5. Starch factories
6. Coal pneumatic cleaning plants
7. Wood flour manufacturing establishments
8. Spice grinding plants
9. Inert gas systems for fire and explosion prevention.

These safety codes, which have been adopted by the National Fire Protection Association and by the National Board of Fire Underwriters and which have been approved as "American Standard" by the American Standards Association, have been very helpful in bringing about the application of precautionary measures that have been instrumental in reducing losses from dust explosions and fire.

Effect of New Manufacturing Processes

Although our attention was called to the dust explosion hazard in a definite way more than fifty years ago, we are still faced with this important, well-recognized industrial problem. The expansion of the various industries, the utilization of by-products and waste materials, the introduction of new methods and processes with correspondingly increased production, and new types and sources of ignition have produced additional hazards in some of our newer industries. The increased use of spray-drying equipment in some of the industries, for instance, has introduced new ignition sources, requiring that care be exercised in the installation of drier equipment of all types in which products are handled in powdered form.

Inert Gas Systems

In grinding and pulverizing operations it is practically impossible to prevent the formation of dust clouds or to eliminate entirely all sources of ignition. Extensive work has been done to develop inert gas systems for the prevention of dust explosions in grinding equipment. Describing the work of the Bureau of Chemistry and Soils on this subject, Hylton R. Brown, Engineer of the Chemical Engineering Division, in Technical Bulletin No. 74, entitled "The Value of Inert Gas as a Preventive of Dust Explosions in Grinding Equipment," states:

"As a result of the experimental work and the observations made during actual operation of inert gas systems in industrial plants, the value of inert gas as a means of preventing dust explosions has been so well demonstrated that its use should be seriously considered wherever an explosion hazard exists which cannot be controlled through the elimination of the dust cloud or the source of ignition. The use of inert gas is particularly recommended in grinding, bolting, or any phase of a manufacturing process where an explosive dust is produced or handled within an enclosed piece of equipment."

Nature and Action of Dust Explosions

As the result of the experimental work on the subject, considerable knowledge as to the action and behavior of dust explosions has been acquired. It is now generally recognized that in their action and behavior dust explosions are somewhat similar to gas explosions. It has been found that the different dusts have definite ignition temperatures, just as the gases do, and that they also have what might be termed the upper and lower limits of explosive concentration.

The ignition sources of explosive dusts are practically

identical with those of explosive gases. It must therefore be recognized that any source that will ignite explosive gases also will ignite explosive dusts.

One of the principal factors in the explosibility of a dust appears to be the degree of fineness. The explosion appears to be nothing more than flame propagation through a very finely and uniformly divided dust cloud. The flame travels at a very rapid rate, building up considerable pressure, thereby producing what we ordinarily call the explosion. It has therefore been extremely difficult in certain instances to determine definitely when the fire ended and the explosion started. It would appear that any fire might result in an explosion if combustible dust clouds are present.

Dust explosions usually occur in two stages—the "primary" and "secondary." The original ignition of the explosive dust-air mixture is termed the primary stage. As a rule the damage resulting from this primary ignition is limited and the explosion is not very violent. This primary ignition, however, is accompanied by sufficient concussion to shake any settled or "static" dust into suspension, and this newly formed dust cloud is ignited by the flame from the first or primary ignition and the secondary explosion follows. Secondary explosions are more serious than the primary. Therefore, if we can limit or weaken the primary puff there will not be any extensive damage.

Explosion Venting Methods

Progress has been made in the development of methods for venting dust explosions in the primary stage. In order to obtain accurate data for various explosive dusts with the different types of venting, special equipment has been installed at the Arlington, Va., experiment station of the United States Department of Agriculture. This experimental structure, in which the venting of dust explosions can be studied, consists of a room, a gallery, and a tower, with a total volume of 333 cubic feet.

The fixed glass windows in the structure provide a factor of safety by breaking when the venting area is not sufficient to prevent the development of excessive pressures. Dust from hemispherical cups may be sprayed into suspension in the air within the structure by jets of compressed air. Ignition is produced by a glowing electric heater coil. Pressure produced by the explosions are recorded by rubber diaphragm manometers, installed at appropriate points in the structure, to record pressures up to 800 pounds per square foot.

On the principle that the breaking of glass indicates the pressure at which structural damage would occur, tests were made to determine:

(1) Venting area per unit volume necessary to prevent structural damage.
(2) Effect of location and distribution of vents.
(3) Effect of differences in size and type of ignition.
(4) Reduction of pressure due to increase in venting area.
(5) Effect of outside glazing.
(6) Effect of scoring glass to reduce breaking strength.

In these tests sixty-six explosions of grain dust and fifty-eight explosions of starch dust were produced. To provide satisfactory venting for an explosion of grain dust in a cube-shaped structure it is recommended that 1¼ square foot of vent be provided for each 100 cubic feet and for starch dust 3 square feet of vent for each 100 cubic feet.

The results of tests with sugar, wood flour, sulphur, cork, powdered milk, soap powder, and similar products indicate that the venting necessary for these dusts ranges between the requirements for starch and those for grain dust.

These venting tests, although confined principally to starch and grain dusts, indicate that:

(1) It is possible to vent dust explosions without structural damage.
(2) Fixed glass offers too much resistance to permit dependence upon it alone for the release of explosion pressures without structural damage.
(3) Many types of venting equipment, hinged doors, windows and panels may be satisfactorily used to release explosion pressures provided sufficient venting area is used.
(4) Vents located near the source of ignition are more effective than those located some distance away.
(5) The venting area required varies for different dusts.
(6) Secondary explosions are more difficult to vent than primary explosions.
(7) A definite reduction in pressure results as the venting area is increased.
(8) Pressures may be released by lowering the resistance of fixed glass by means of outside glazing or by scoring.

Practical Application of Venting Tests

It must be recognized that some dust explosions are certain to occur in grain elevators and grain-handling plants. The extent and seriousness of these explosions can be minimized by making practical application of the results of these venting tests. The proper use of light construction, hinged panels, or large glass and sash areas that give quick venting at low pressures should be embodied in specifications for construction of grain elevators and plants producing or handling combustible dusts, and all plants that are subject to the dust explosion hazard. Built up pressures produce undue spread of flame and result in secondary explosions, which are responsible for most of the life loss and damage to structure and equipment. This extensive loss can be prevented by the application of proper dust explosion venting methods.

(Excerpts from a paper read before the fifth annual convention of the Society of Grain Elevator Superintendents of North America.)

Fire Apparatus Models Wanted

Models of fire fighting equipment showing the hand pumpers and up to modern motorized equipment, including the steam engines, are wanted by Linden T. Harris, 240 South 4th Street, Philadelphia, Pa. Those having such models are asked to communicate with him.

North Dakota School

A regional fire school was held at Carrington, N. D., the first school ever to be held in the state. It was sponsored by the Carrington Fire Department, and had the cooperation of the Fire Underwriters Inspection Bureau of St. Paul. represented by Sanford Herberg. The principal instructor was Captain H. E. Jergenson of the Minneapolis Fire Department. About 150 men from thirty different departments attended the school.

Newburgh Ends Volunteer Force

A semi-paid Fire Department has been instituted to take the place of the volunteer force of five fire companies at Newburgh, N. Y. The change was made by the City Manager in accordance with a recommendation made by the National Board of Fire Underwriters. Peter L. T. Van Tienan was appointed Chief and George R. Brown, Assistant Chief.

A large number of persons paraded as a protest to the change. The five fire companies are being organized as social clubs with an object of opposing the election of all Council members who voted for the paid department.

Wilkes-Barre Chief Ousted by Council

Thomas Flannery, Chief of the Wilkes-Barre, Pa., Fire Department, of which he was a member for twenty years, will be demoted to the rank of private in April. Ambrose Saricks, a member of another city department, has been appointed Chief. Saricks served as campaign manager for Mayor Loveland. The vote was two Council members and the Mayor for the change and two against.

The Mayor was accused by a resident of an attempt to build up a strong political machine, as the new appointee is considered a strong vote-getter.

The Council voted to make the change April 15, 1935, so that Chief Flannery may enjoy the full benefit of his pension rights.

Columbus Plans Added Water Supply

Chief E. P. Welch of the Columbus, Ohio, Fire Department has presented tentative plans for a new source of water supply for fighting fires in the down town area to Ohio Inspection Bureau for their approval. If the project goes through, it will be carried out with the aid of workers supplied by the FERA.

At the present, it is said, should a water main break during a fire the Fire Department would be unable to prevent the fire from involving an entire block.

Under the proposed system water would be drawn from the Scioto River, with the present water system retained. A pumping station will be erected near the river and water will be supplied at high pressure.

Eleven point protection

CENTRAL STATION Sprinkler Supervisory Service performs 11 important functions ...in addition to notifying the fire department, automatically, quickly and accurately when water flows from the sprinkler system, it includes these essential safeguards:

IT AUTOMATICALLY REPORTS:

Opening or closing of shut-off valves;
High or low air pressure in dry pipe systems;
High or low water in gravity tanks;
Low temperature in gravity tanks;
High or low air pressure in pressure tanks;
High or low water in pressure tanks;
Power supply to fire pumps cut off.

All electrical circuits are under the constant supervision of the Central Station.

A.D.T. assumes full responsibility for the inspection and maintenance of the entire supervisory system.

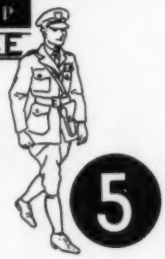
Every alarm is investigated immediately by A.D.T. Central Station operatives and is followed closely until normal conditions are restored.

94,230 sprinkler waterflow and supervisory signals were received in A.D.T. Central Stations during 1933... all indicated conditions requiring immediate correction and were speedily and effectively acted upon.

11 POINT PROTECTION, supplied only by A.D.T. Service, assures instant automatic reporting of fires and that sprinkler systems receive the care and attention necessary for successful operation. We shall be glad to send you descriptive literature.

CONTROLLED COMPANIES OF
AMERICAN DISTRICT TELEGRAPH COMPANY, 155 SIXTH AVE., NEW YORK, N.Y.

A·D·T *Protection* *against* FIRE · BURGLARY · HOLDUP
A NATION-WIDE SERVICE



NEW QUICK-HITCH COUPLING

FOR HYDRANT AND HOSE CONNECTIONS

The Last Word in Fire Department Efficiency

Here is a new piece of equipment FIRE CHIEFS will welcome. It takes the HARD out of HARD SUCTION connections. It makes a firm watertight connection in a flash. Operates through positive cam action and has NO SPRINGS. Less than a quarter turn of handles. Locks coupling on hydrant in a few seconds.

It's a

TIME SAVER
LIFE SAVER
PROPERTY SAVER

Inquiries Invited from Fire Chiefs and Dealers

INTERNATIONAL AUTOMATIC COUPLING, INC.

24 MILK STREET BOSTON, MASS.

AFTER all, a good badge is a sensible investment. Not everyone can wear a fireman's emblem of service. You men who have devoted your lives to saving life and property should be proud of your badge.

You will be if you wear a BRAXMAR BADGE. Over fifty-five years of experience goes into every badge you buy.

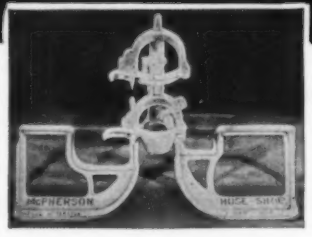
Catalog on request.

C. G. BRAXMAR CO., 242 West 55th Street, New York

BRAXMAR BADGES

Standard for Over Fifty Years

McPHERSON FIRE HOSE SHOE



Does the job of a Turret—

and at much less cost

If your needs call for a deck gun, a deluge set or a turret nozzle and your budget can't comfortably stand the price of these items, we suggest you get the dope on this new fire hose shoe. It actually takes the place of other high priced equipment and does just as fine a job.

It converts back pressure into down pressure, prevents backlash, stands on its own feet and takes all the pressure your hose will stand. Why subject your men to punishment when this hose shoe can be left standing in the tough spots.

Write for full information—now.

GENERAL APPARATUS CORP.

1928 E. SEVENTH ST.
LOS ANGELES, CALIF.

PLAN REORGANIZATION OF AMERICAN-LA FRANCE AND FOAMITE CORP.

Large Fire Apparatus Manufacturer Applies to Federal Court for Relief from Financial Burdens

IN a petition filed in the United States District Court November 15th, the American-LaFrance and Foamite Corporation, of Elmira, N. Y., asked for permission to reorganize and revise its capital structure under Section 77-B of the Banruptcy Act. The petition, authorized by a resolution of the Board of Directors, was signed by Charles B. Rose as President.

Inability to meet maturing obligations, consisting chiefly of a semi-annual interest payment of $82,500 due December 1, 1934, on the $3,000,000 in 5½% notes outstanding, was given as the reason for the corporation's immediate difficulties. Leading up to this situation were heavy losses sustained in the commercial truck end of the business, coupled with the falling off of the volume of fire apparatus sales due to the depression. The motor fire apparatus business dropped from a total of $5,657,943 in 1926 to $592,228.27 in 1933, in line with the motor fire apparatus industry as a whole and parallel with the general decline in the production of durable goods. The total sales in all departments of the corporation totaled $2,466,837.50 in 1933. For the first six months of 1934, the earnings, before deducting depreciation and interest charges, were $95,012.14.

Following a hearing on November 30, Federal Judge Bondy issued an order continuing the corporation in charge of its affairs and authorizing it to continue the business, subject to the further order of the court, pending formulation of a plan of reorganization. It is expected that the new plan will be ready to submit about December 15. Under the present law, the consent of holders of 66⅔% of the notes, and a majority of the preferred and common stock, is required to effect reorganization.

Following is a brief description of the corporation's financial condition taken from the balance sheet of June 30, 1934, based on present book value.

Assets

Cash on hand and in banks			$ 128,559.18
Notes, warrants, etc. (given principally by municipal customers) receivable, and accrued interest, due within one year and exclusive of overdue items			473,259.39
Accounts receivable, less $18,250 reserve for doubtful items			4,423.21
Notes, warrants, etc., receivable and accrued interest due after one year and overdue, less reserve for doubtful items			615,212.05
Inventories of raw materials, finished and semi-finished stock and supplies at book amount, less reserve of $191,238.88			702,428.12
Due from subsidiary companies, less reserve for inter-company profit			590,745.54
Treasury stock, 571 shares preferred, 4,914 shares common, at cost			54,797.19
Fixed assets (excluding fully depreciated assets, $1,188,570.93), at cost:			
Land		$ 137,334.46	
Buildings	$ 867,295.82		
Machinery and equipment	729,648.70		
Patterns, tools, etc.	297,569.30		
	$1,894,513.82		
Less, Reserve for depreciation	927,820.13	966,693.69	1,104,028.15
Investments:			
LaFrance-Republic Corporation common (55 per cent.), preferred stock (62 per cent.), at value at which carried on books		$1,730,441.19	
Wholly owned subsidiaries		269,573.59	2,000,014.78
Deferred charges			25,731.64
Good will			3,164,044.39
Total Book Value of Assets			$8,863,243.64

Liabilities

Accounts payable			$ 124,734.60
Accruals, interest, taxes, etc.			42,947.02
Reserve for contingencies			31,710.50
Five-Year 5½ per cent. notes due June 1, 1936		$3,089,000.00	
Less notes held in treasury		89,000.00	3,000,000.00

Capital

Preferred stock, 7 per cent. cumulative, par value $100, authorized $7,500,000, issued 58,000 shares		$5,800,000.00	
Common stock, no par value, authorized 750,000 shares, issued 609,300 shares		$2,437,200.00	
		$8,237,200.00	
Capital surplus	$ 74,261.92		
Deficit	2,647,610.40	2,573,348.48	5,663,851.52
			$8,863,243.64

In order to clarify the meaning of the proposed reorganization, Charles B. Rose, as President of the company, filed the following statement with the Code Authority of the Motor Fire Apparatus Industry, under date of December 1, 1934:

"As you know, the American-LaFrance and Foamite Corporation, on November 15th applied to the Federal Court for permission to reorganize their capital structure under Section 77-B of the Federal Corporate Reorganization Act. This action is not a Bankruptcy action in the old sense as some people have erroneously supposed—the erroneous impression perhaps being due to the fact that the Federal Corporate Reorganization Act is made a part of the Bankruptcy Act as an amendment thereto. The Corporate Reorganization amendment was passed at the last session of Congress to make possible capital reorganizations and allow corporations to adjust themselves to prevailing conditions.

"I think you will agree that this precedure is logical for corporations such as ours. Many corporations have already taken advantage of this Act, and undoubtedly many others will do so in order that they may readjust their capitalization.

"The American-LaFrance and Foamite Corporation is not insolvent and in this case the facts will not permit any other finding than that the company is solvent.

"When the proposed reorganization has been completed—and we have every reason to believe that it will be consummated promptly—our company will be in a much sounder position than it has been at any time in many years. This reorganization applies to the Parent Company only, the American-LaFrance and Foamite Corporation, and does not affect the operations of its subsidiaries, namely, American-LaFrance and Foamite Industries, Inc. (principal sales company) American-LaFrance and Foamite Corporation, Pacific (Pacific Coast sales company) LaFrance Fire Engine and Foamite Limited (Canadian manufacturing and sales company) Foamite Firefoam Limited (European manufacturing and sales company).

"We are giving you this information in order that you may be in possession of the true facts in regard to this action."

In addition to Mr. Rose, as President, the officers listed are: Wallace J. Childs, Executive Vice-President and Orley M. Cantor, Secretary-Treasurer. The Board of Directors consists of the three officers and the following: Paul Appenzellar, Alexander D. Falck, William L. Geddes, Clifford Hemphill, George W. Mixter and William E. Ransom. Mr. Geddes is President and Mr. Ransom Vice-President of the MacAndrews & Forbes Company of New York, the largest holder of the American-LaFrance and Foamite notes and also of the preferred and common stock. Mr. Childs, who was President of the old Foamite-Childs Corporation before it was bought over by the present organization in 1927, is also one of the large holders of preferred stock, and Mr. Falck, who is Chairman of the Board of the Corning Glass Works of Corning, N. Y., and resides in Elmira, owns or controls a substantial amount of the notes and preferred stock.

Son of Chief Souney Killed by Hoodlums

During the height of the wildest Hollowe'en night in the history of New Britain, Conn., Joseph Souney, fourteen-year old son of Deputy Chief Michael T. Souney, was kicked and fatally beaten by a gang of hoodlums near his home. He died a short time later in the New Britain Hospital as the result of internal injuries. Two members of the Fire Department donated blood for transfusions.

Within a short time ten false alarms were sounded and sixteen calls sent for malicious fires. Not content with the false alarms, the miscreants opened twenty-five hydrants in various parts of the city and water was permitted to gush down the highways. Two hydrants were toppled over.

While making a run in answer to one of the false alarms, Chief William Noble's car nearly collided with a number of parked cars in the business section of the city.

Deputy Chief Souney is one of Connecticut's best known fire officials. He is Treasurer of the Connecticut State Firemen's Association. THOMAS F. MAGNER.

New York Sets Up New Departments

Due to changes in the Purchase Department of New York City, the Bureau of Repairs and Supplies of the New York Fire Department has been abolished and Chief J. J. McElligott has created three new divisions. They are the Division of Fire Apparatus, Bureau of Fire Department Buildings, and Bureau of Accounts and Pensions.

Deputy Chief Richard J. Marshall is in charge of the Bureau of Repairs and Supplies. This department will prepare plans and specifications for the purchase of new fire fighting apparatus and equipment, will conduct the necessary tests, and will maintain the repair shop.

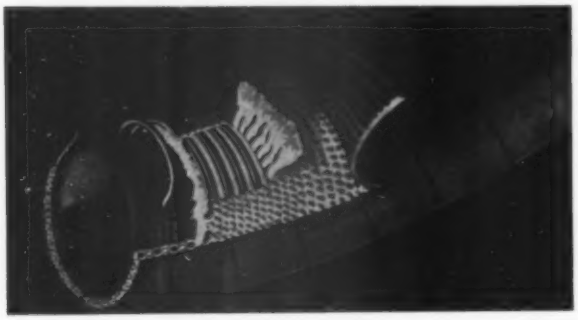
The Bureau of Fire Department Buildings, headed by Hubert J. Treacy, will prepare plans for the construction of new department buildings and the necessary alterations and repairs to existing buildings and will supervise new construction of repairs of buildings.

Michael P. Corrigan has been designated Chief Clerk in Charge of the Bureau of Accounts and Pensions. This department will prepare annual budgetary estimates, operate ledger accounts, make financial statements, check and disburse the department pay checks, and administer the department's relief and pension funds.

Manufacturers' Announcements

Suction Hose

A new type of suction hose is being manufactured by the Electric Hose & Rubber Company, Wilmington, Del. It has



Showing Construction of Delmar Suction Hose

a woven tubular reintorcement of cabled cotton cords and wire. If crushed the shape of the hose may be restored. The hose, marketed as Delmar suction hose is made in all sizes up to 4-inch inside diameter.

Buckeye Announces New Nozzle

Buckeye Iron and Brass Company, Dayton, Ohio, manufacturers of Roto-Rays, Buckeye exhaust whistle and other fire department appliances, announces a new line of shut-off nozzles featuring water tightness. Regarding the new shut-off nozzles, the manufacturers state:

"The Buckeye is a simplified, practical, shut-off nozzle that will not leak. It will not open nor close itself under pressure when valve is partially shut down, yet the shut-off works easily under pressure. All working parts are accessible. A smooth, clean tapered water-way insures a perfect stream. No chance of washers protruding out into the water-way."

The Buckeye shut-off nozzle is made in several types, including play-pipe complete with ladder hook and swivel leather handle; shut-off nozzle without handle or ladder hook, New York Style, and with the Detroit type tip; one and one half inch leader line shut off nozzle; one inch chemical nozzle; New York Type two and one half inch shut-off nozzle, complete with play-pipe permanently attached, brass swivel handle, and tip; New York Type two and one half inch shut-off nozzle, with play-pipe and tip, no handles.

Westchester Chiefs Discuss Inflammables

The subjects of Inflammables and Irritants; Discipline in the Volunteer Fire Department and Ventilation were treated in three papers read before the regular meeting of the Fire Chiefs' Emergency Plan. Treasurer Riviere reported that Manor, N. Y., on the evening of Wednesday, November 21. The President, Chief Earl Krows, of Hastings, who presided, called upon Mayor Lester H. Graves, to welcome the members. There was a large delegation present, headed by President Knickerbocker, from the Fairfield County, Conn., Fire Chiefs' Emergency Plan. Treasurer Riviere reported that the financial affairs of the Plan were in greatly improved condition, and that the defunct Larchmont bank had recently paid a dividend of ten per cent of the amount due, with a possible prospect of payment in full at a later day. Secretary Dawkins read a number of proposed changes in the Constitution and By-Laws of the Plan, which were laid over until the next meeting for adoption.

Leo Lieberman, Chief Chemist, Bureau of Combustibles, of the New York Fire Department, spoke interestingly on the subject of Inflammables and Irritants in the Work of the Fireman. He pointed out the various hazards that the fireman is apt to meet in fires where chemicals are involved, such as refrigerators, air conditioning, dry cleaning establishments, chlorine gas, nitro-cellulose X-ray film, etc. He described the various new chemicals used in these industries, and the hazards that are to be guarded against in handling fires where they are involved or where leaks have to be stopped. Several members asked questions of Mr. Lieberman, which he answered. At the conclusion of his address he was given a vote of thanks and was elected an Honorary Member of the Plan.

The second speaker of the evening was Robert H. Lockwood, Associate Editor of FIRE ENGINEERING, who, at the request of the Educational Committee, repeated the paper read before the Fairfield Chiefs' Plan last month on "Discipline in Its Relation to Efficiency in the Volunteer Fire Department." Mr. Lockwood was tendered a vote of thanks at the conclusion of his paper.

A communication was received from the Rockland County Volunteer Firemen's Association, enclosing a resolution passed by this association suggesting that all contests be eliminated from the volunteer firemen's association meetings, and that the time given to such contests be devoted to the reading of technical papers. The resolution was received, but no action was taken.

The third paper of the evening was read by Chief Brennan, of the Pelham Manor Department, on "Ventilation," being an address before the I. A. F. C. some time ago and published in pamphlet form by that association. The paper was discussed by Chief Chambers, Yonkers, and a vote of thanks was given Chief Brennan for presenting it.

On invitation of First Deputy Chief Charles A. Hagelston, of Larchmont, it was decided to hold the next meeting in that village on the evening of Wednesday, December 19. Refreshments were served after the meeting, by courtesy of the Pelham Manor Department.

Portable Unit for Making Foam

A complete unit for making foam which may be easily carried about by the fireman, is being manufactured in England.

The foam compound is carried in a five-gallon tank strapped to the back of the operator. The makers claim that one gallon of the foam compound will produce from five to eight hundred gallons of foam, according to working conditions. From the tank, the compound flows to the branchpipe, where it is mixed with the stream of water. It is said that the nozzle can deliver from 250 to 1,250 gallons of foam per minute.

Operation of Branchpipe

Claims are made that a 400-gallon pumper operating at 120 pounds pressure can supply eight branchpipes each delivering six hundred gallons of foam per minute, thereby producing a total foam output of 5,000 gallons per minute.

A Correction

In an account of the 55th annual convention of the Firemen's Association of Pennsylvania, appearing in the last issue of this journal, it was stated that the meeting was held at Sudbury, Pa. This should have read Sunbury. The 1935 convention of the association is to be held at Connellsville, Pa., on October 1 to 3, according to word received from Secretary Charles E. Clark, Wayne, Pa.

Joliet, Ill., has purchased the 1,000-gallon American-LaFrance pumper which was on exhibition in the Travel and Transportation Building, Century of Progress, Chicago.

In all well-informed circles they are talking about BUCKEYE Fire Department Equipment

Fig. 937—WARNING WHISTLE

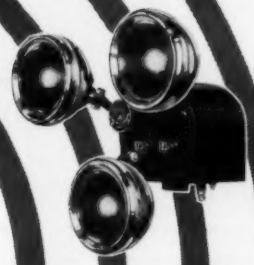


Fig. 931—ROTO-RAYS

The term "Warning Signals that Warn" as applied to Buckeye Fire Whistles and "Roto-Rays" has been well known for many years. For a piercing, attention-compelling sound-signal nothing can even approach this whistle. The "Roto-Rays" with its powerful revolving red lights instantly identifies a piece of fire apparatus or your officers' cars many blocks away.

And now well-informed circles are beginning to talk about Buckeye Shut-off Nozzles that WILL NOT LEAK. There is a complete line of these nozzles. And they are giving amazing results everywhere they are in use.

The latest member of the Buckeye family is the expander which takes all segments from ¾" to 3" inclusive, and special sets of segments are available for attaching 2½" coupling to 3" hose. Write for complete information on any—or all—of this equipment.

BUCKEYE IRON & BRASS WORKS
DAYTON, OHIO

Fig. 900—SHUT-OFF NOZZLE

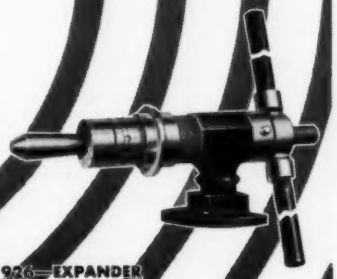


Fig. 926—EXPANDER

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THE CHIMNEY FIRE EXTINGUISHER

QUICKLY
CONVENIENTLY
EFFECTIVELY
puts out
CHIMNEY FIRES

NO WATER — NO ACID — NOTHING TO DAMAGE THE CHIMNEY

USED AND RECOMMENDED BY MANY FIRE DEPARTMENTS. IF YOU ARE NOT ACQUAINTED WITH CHIMFEX, ASK YOUR FIRE DEPARTMENT SUPPLY DEALER ABOUT IT, OR WRITE THE MANUFACTURERS.

CENTRAL RAILWAY SIGNAL CO., INC.
NEWTON, MASS.

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This is what hundreds of firemen say about the

MIDWESTERN FIREMEN'S COAT

It is the only firemen's coat that has the Famous Safety Snap which enables you to fasten and unfasten the coat with one hand. Nothing can catch on this snap accidentally. And it's easy to fasten and release it in cold weather.

—o—

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—o—

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MACKINAW, ILLINOIS
Manufacturers of a Complete Line of Quality Firemen's Clothing

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All drivers of fire apparatus will welcome this new face shield. It prevents wind tears, watery eyes and affords full protection against frozen noses and frost bitten cheeks and chins. Protects against stinging wind burns and flying insects. It covers and guards all the face without discomfort, just slip it on. Open mouth slit to breathe and talk through.

Made special only for W. S. Darley & Co. customers.

Nothing else like it that we know of, except aviation goggle masks that sell for $7.50, and well worth the price, for the workmanship and material. We designed these even better for fire department drivers, as follows:

Goggles are wide vision and pear shaped, very rigidly made with aluminum frame and with a spring hinged nose bridge. The lenses are clear SHATTER-PROOF glass. The inside is cushioned against the skin with silk and wool fur chenille. The body is 100% wool khaki government cloth. Eye cups are collapsible and ventilated so as not to fog. The headband is wide and adjustable. It is just the right idea, not only for drivers but for every man that has to ride an open fire truck in winter.

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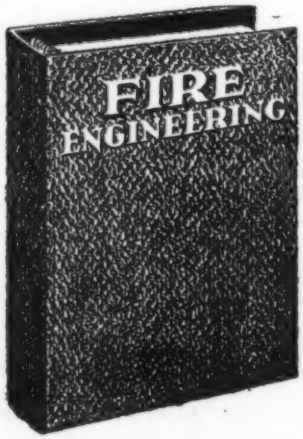

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Chief Roddy of Monroe Injured

Chief Frank Roddy, of the Monroe, La., Fire Department, was severely injured when the coupé he was driving to a minor fire was struck by another automobile at a street intersection. One person in the private car and two others were injured. Chief Roddy was removed to a local hospital suffering from cerebral concussion, a possible rib fracture and lacerations. Witnesses stated that the siren on the Chief's car was blowing at the time of the accident.

Rhode Island Fire Chiefs Meet

A motion picture on how rubber is produced and how golf balls are made was shown at the November meeting of the Fire Chiefs' Club of Rhode Island, Providence, by Chief Irving S. Black of the Providence Plant of the U. S. Rubber Products, Inc.

R. W. Cotton, a representative of the Samson Electric Company, Boston, manufacturers of loud speaking equipment gave a demonstration of how all stations of a fire department could be addressed at one time on the regular department telephone or fire alarm wires.

Hazard of False Alarm

A fireman of the Minneapolis Fire Department lost his life in an accident which was the direct result of a false alarm. In speaking at the funeral, Chief Earl A. Traeger protested against the needless sacrifice of life to the whim of a malicious person who delights in sending false alarms. All over the country, he said, Chiefs are trying to find some solution to the problem of ending false alarms.

Campaigns to reduce the number of false alarms in cities have increased the number of such calls. Chief Traeger considered the dead fireman as a martyr to the cause and principles of the fire service.

Ex-Chief McEvoy, of DeKalb, Dead

Michael H. McEvoy, who retired in July as Chief of the De Kalb, Ill., Fire Department, died at the age of fifty-nine. He had been in poor health for a year. Early in the year he was given a leave of absence but he returned to duty in June. In July he again suffered a relapse and was pensioned on his own request. He was the first member to be placed on the pension list. Chief McEvoy had been a member of the department for over forty years, and was appointed Chief in 1912. He is survived by three brothers and two sisters.

Junior Fire Chief—A Book for Boys

A juvenile publication, "The Junior Fire Chief," by Miriam Rosenthal, has been published by Samuel Gabriel & Sons Company. The book is a story of a boy's visit to the fire department and of the interesting things he observed. It contains many illustrations.

Pinned to the inside cover is a gilded Junior Fire Chief badge which the young reader is advised not to remove from the book. After he has read the book, there is a pledge in the back of the book which he is to sign. He is then directed to bring the book to the local Chief who will sign a very impressive appearing certificate which forms the last page of book. It is a Certificate of Membership of the Junior Fire Chiefs of America. The Chief has the authority to remove the badge and pin it on the coat of the boy who has signed the pledge. The youngster is given the privilege to wear the badge as long as he lives up to his fireman's pledge.

In this way the author hopes to start a nucleus for fire prevention habits and provide interesting hours of reading.

N. N. W.

Box 52 Association Holds Dinner

The anniversary dinner and meeting of Box 52 Association, Inc., Boston, Mass., was held November 21 in the Chamber of Commerce Building, Boston, and was attended by about 125 members, ladies and guests.

T. Z. Franklin, Manager of the Special Hazards Department of the Aetna Insurance Company, gave an interesting demonstration of fires caused by spontaneous ignition, overloaded electric wiring, and other causes. He also showed dust explosions and flames caused by the ignition of celluloid novelty dolls.

Ex-Assistant Chief Thomas F. Dougherty, of New York Fire Department, related some of his experiences while a member of the New York fire department.

President P. Hildreth Parker directed the proceedings and introduced Boston's veteran insurance agent, Mr. Charles Liffler, who told of his view of the Great Boston Fire of 1872, when he came in from Roxbury upon seeing the glare of the flames in the sky.

Trade-in Allowances on Used Fire Apparatus

Through its Code Authority the motor fire apparatus manufacturing industry has asked for the approval of the National Industrial Recovery Board of its standard for trade-in allowances on used motor fire apparatus. Objections to or criticisms of the proposed standard must be filed before December 20 with Deputy Administrator W. W. Rose, Room 4038, Department of Commerce Building, Washington.

The rules and regulations proposed would require all members of the industry to determine and establish within sixty days of their approval, the maximum trade-in allowances they consider appropriate for apparatus they manufacture. These would be filed with the Code Authority, members reserving the right to refile schedules at regular intervals of not less than three months.

Lists filed with the Code Authority would be made available to any manufacturer, dealer or importer within the industry.

Indications of Defective Hydrants

A system of indicating to Fire Department officers which hydrants are not in good operating condition, has been developed by the New York Fire Department.

Cylindrical discs 7½-inches in diameter and made of 20-gauge metal are supplied to the company officers for use by the firemen hydrant inspectors.

When an unserviceable hydrant is discovered, the hydrant cap is removed, and a disc is placed on the outlet like a collar and then the cap is replaced. For a 3-inch outlet the disc has a 3¾-inch hole in the center; for a 2½-inch outlet, a 3¼-inch hole. The discs are painted and are stamped with the number of the engine company and individual numbers from 1 to 10. A marking E71-1 is an indication that inspector No. 1 from Engine Company 71 placed the disc and that when the hydrant is placed back in service, the disc could be returned to the proper company.

If an entire high pressure hydrant cannot be used, or if more than two independent valves are frozen, a striped disc is placed over the outlet nearest the roadway. If two independent valves are workable, discs without stripes are used. A high pressure hydrant with a striped disc is to be passed by incoming companies.

CONVENTION DATES

Dec. 19—FIRE CHIEFS' EMERGENCY PLAN (of Westchester County, N. Y.)—Regular Meeting, Fire Headquarters Larchmont, N. Y. Secretary, Captain Walter M. Dawkins, 72 Thatcher Street, Harrison, N. Y.

May 13-17, 1935—NATIONAL FIRE PROTECTION ASSOCIATION. 39th Annual Meeting, Atlanta, Ga. Secretary-Treasurer and Managing Director, Franklin H. Wentworth, 60 Batterymarch Street, Boston, Mass.

June 11-14, 1935—ILLINOIS FIRE COLLEGE. 11th Fire College, under auspices of Illinois Firemen's Association. Address, Assistant Chief Roy W. Alsip, Secretary, Illinois Association, Fire Department, Champaign, Ill.

June 25-27, 1935—NEW ENGLAND ASSOCIATION OF FIRE CHIEFS. 13th Annual Convention, New Bedford, Mass. Headquarters, Hotel New Bedford; Exhibits, New Bedford Armory. Secretary-Treasurer, Chief John W. O'Hearn, Watertown, Mass.

July, 1935—MICHIGAN STATE FIREMEN'S ASSOCIATION. 61st Annual Convention and 7th Annual Fire College, Detroit, Mich., probably in middle of July. Secretary-Treasurer, Statistician and Director, Fire College, Charles V. Lane, Charlotte, Mich.

July 16-17, 1935—MARITIME FIRE CHIEFS' ASSOCIATION. 21st Annual Convention, Moncton, N. B. Secretary-Treasurer, Capt. K. J. MacRae, Salvage Corps and Fire Police No. 1, Saint John, N. B.

July 29-Aug. 1, 1935—WEST VIRGINIA FIRE SERVICE EXTENSION SCHOOL. 5th Annual School, West Virginia University, Morgantown, W. Va. Address Secretary, W. Va., Fire Chiefs' Ass'n., C. B. Powell, Romney, W. Va., or Prof. Lewis V. Carpenter, Director, at University.

July 30, 1935—WEST VIRGINIA FIRE CHIEFS' ASSOCIATION. 4th Annual Meeting, West Virginia University, Morgantown, W. Va. Secretary, Chief C. B. Powell, Romney, W. Va.

Oct. 1-3, 1935—FIREMEN'S ASSOCIATION OF PENNSYLVANIA. 56th Annual Convention, Connellsville, Pa. Secretary, Charles E. Clark, Wayne Pa.

CORRESPONDENCE

Transmission of Alarms

To the Editor:

Let us consider telephone and box alarms and where each may apply. A recent magazine article argued for the use of box alarms and stated telephone alarms resulted in misdirected runs.

An efficient alarm office setup and its personnel can have the same relation to the department as a good quarterback has to a football team, calling the signals and directing the offense with the proper attack by dispatching companies and covering up.

With the telephone alarm the street address must be taken and not "Jones' shoe store." If the street name cannot be understood, ask for the next cross street corner. The telephone company will listen-in and trace your call immediately if so requested, if your fire alarm phone and some other number are similar, the company will gladly change the numbers or supply a prefix such as "Fire."

Besides, the average city has not enough boxes to cover the city properly. The great usefulness of the box comes late at night when people walking or driving along, see a fire and cannot contact a telephone and do not know where a box is located.

The location of boxes in factory and tenement districts is of course mandatory. Factory watchmen boxes and ADT systems of all types are likewise indispensable as the factory switchboards are disconnected usually at night and they serve as a double-check also in the event of accident from any cause to the watchman.

We recommend people to telephone the exact location and what is burning if possible, or to pull a box if one is close, but to do both if there is any doubt about either transmission.

The foreigner who tries to report a location in his native tongue is a difficult problem, but operators who know their streets can by methods of their own, get the call without much trouble.

The use of dial phones makes it impossible to trace calls back, but a little more care can be taken in cities where they are in use.

We have a fine modern 20-circuit system operating 135 boxes with small number groups, with direct current copper oxide rectifiers charging our battery rack. We have an alternating throw-over current into a direct current generator in case of power line trouble. The re-transmission of boxes out of the alarm office is by a manually operated dialed pedestal.

We have a 10-trunk-line incoming PBX telephone switchboard, with direct wires from the ADT Central Office, and Police Department. We get occasional inhalator requests from the police and their radio detective squad cars get in touch with our Chiefs while they are at fires.

We have a direct ringing connection with every station for the transmission of telephone alarms, and a turret spill broadcast phone to talk to all stations at once. We have also a telegraph sounder key for companies return and a recording tape register in the office for companies return. No company moves on anything, unless designated by the office, except on the first box.

Box alarm complement of companies range from two engines and one truck, to four engines and one truck on first alarm.

Telephone complements of companies vary depending on the type and location of fires. For instance, an auto, grass, public dump, and bonfire will receive one engine company inhalator, rescue, etc., and usually one truck company; chimney fires one engine and one truck company; residential general alarm two engine and one truck company; semi-business district three engine and one truck company; business and factory districts four engine and one truck company. Two chiefs go on all general alarms.

Rockford covers approximately ten square miles within the city limits with a population of 90,000. But we also service a suburban area totaling about 100 square miles and a population totaling 135,000 combined.

Through our Watchmen's School of Instruction, the Boy Scout Courses in Firemanship, the Suburban Instruction Groups, the Insurance Rider Clause Policy Holders, and the general publicity of our ideas of alarm transmission to school and business groups, we have been highly successful in our work.

A thoroughly modern and progressive Chief of Department has been the motive power behind the ideas.

Yours truly,

C. L. BARGREN.
Rockford, Ill.

Use of Air Pressure for Chemical Tanks

To the Editor:

We have all been faced with strict economy in maintaining apparatus and any suggestion, whereby we may save a few dollars without impairing the service we render, should be given a trial. A member of this department, Captain Dell Davis, attached to headquarters company, suggested the replacing the soda and acid in our 35-gal. chemical tanks with air pressure as the method of expulsion, which we did.

The agitating equipment and acid jars were removed and openings for agitating handle plugged. A high pressure tire valve tapped into the top of each tank, soda water replaced with clear water to the overflow level, then with all valves closed, air pressure was applied to the tanks as you would a tire. In determining the amount of pressure necessary to expel the water, several pressures were tried; 100 lbs. was found a little weak to discharge all the water through our regulation 150 ft. of 1-inch chemical hose, using the chemical and not the booster tip; 150 lbs. was a little in excess of what was wanted as the pressure tended to break up the stream, so we tried 125 lbs. pressure and found it gave a more steady and more satisfactory stream than soda and acid, and, furthermore, this pressure will expel all the water from the tank.

This line has been carried to the roof of a 5-story building and proved satisfactory.

I have been rather reluctant to mention this method before, until we had given it some actual trials over a period of time, and since it has been 15 months since we changed over, we feel it has been proven a success.

Some may say, "why not install a booster pump or expel the water with air or nitrogen cylinders?" The answer is lack of funds.

Yours truly,

A. C. DuREE,
Chief of Division of Fire,
Department of Public Safety.

Billings, Mont., has ordered a 50-foot Pirsch ladder. The apparatus is to be delivered within ninety days.

Apparatus from Medford and Everett assisted at a general alarm fire in Malden, Mass., recently. The blaze originated in the basement of a building in the business section and spread to the upper floors. Damage was estimated at $40,000. Deputy Chief Loren A. Keddie was in charge in the absence of Chief William J. Dooling.

Training for an Industrial Brigade Member of England

This photograph was taken during a competition among members of an English industrial brigade. The contestant is shown racing with roll of linen hose which he is unrolling as he is running. It is the custom of the London Fire Department to test linen hose up one hundred pounds pressure every twelve months.

We Offer Firemen The Most Complete Line In America

Uniforms **Shoes**
Uniform Overcoats **Jackets**
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(with or without detachable lining)

All Uniforms and House Pants are Made to Measure and UNION MADE

We are patentees of the detachable feature of firemen's coat which provides a heavy blanket plaid lining (70% wool) which is removable in warm weather. The most satisfactory garment for winter and summer wear. Water-proof bunker pants with detachable lining in same materials. The outer water-proofed fabric will not absorb water, and ice will not cling to it. Our garments are the result of years of study and experimentation. Bunking outfits and coats without detachable lining if preferred. We have them all—a complete line for firemen. Write, or wire if you are in the market for immediate delivery or send for catalog showing our complete line. We solicit opportunity of bidding on city orders.

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Illustrating Fireman's coat and bunking pants, both with detachable lining.

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Bi-Lateral Fire Hose

The one hose that does not require frequent replacements. Always reliable for fire service no matter how old, if the jackets are intact.
Lined with three rubber tubes.
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Firemen Prefer
GOODALL FIRE HOSE
Because of the soft, flexible cotton Jackets which make the hose easy to handle under pressure and to fold, readily, in the body of the hose cart.
Write for agency plan.
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takes opportunity at this season to remember all their old friends and customers and to wish them all a very
Merry Christmas
and a happy, prosperous New Year.

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Established 1864
Clay Automatic Door Opening Devices for Fire Station Doors Opening either In or Out. Save valuable minutes in getting to fires. Send for Bulletin.

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SAMBO
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CHIMNEY FIRES
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We will send an initial order of 3 doz. boxes of SAMBO and bill you $15. You can pay in 30 days.
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The modern audible fire alarm system, instantly recognized above all other noises. Guaranteed dependability—entirely weatherproof.
Federal Engineers will make a survey of your village, town or city, free of obligation. Know the right Fire Alarm for your community by knowing FEDERAL.
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Are given preference by so many fire protection and water works men because they know that more than half a century of experience go into their manufacture and they embody valuable and exclusive features.
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Founder of Fire Prevention Week Dead

Christopher Marsh Goddard, for thirty years Secretary of the New England Insurance Exchange and credited with being the originator of Fire Prevention Week, died at the home of his nephew in Short Hills, N. J. He was seventy-eight years old.

He was a retired electrical engineer. Mr. Goddard had been President of the National Fire Prevention Association, and nine years ago retired as Secretary of the insurance exchange.

The Standard Drill Manual

Battalion Chief Robert B. Rogers, of the Seattle, Wash., Fire Department, has written "The Standard Drill Manual," to meet a demand for a standard method of drilling and handling fire equipment.

The paper bound book of 121 pages attempts in plain firemen's langauge to outline a training program, and to list the standard tools, fittings and equipment provided for firemen. The methods outlined are considered the latest and most advanced practically tried evolutions.

The book has been divided into sixteen chapters with the material arranged as follows: Drills, purpose, and how to conduct; fire-fighting terms and phrases; standard equipment on the rigs; placing equipment on the rigs; description of the equipment; knots and ropes; hose drills, 2½-inch hose; hose drills, 1½-inch hose; hose drills, booster and chemical hose; hydrants; drills with suctions; ladder drills, salvage drills; smoke mask drills; ventilation drills; first aid drills.

A number of organizations have cooperated in the preparation of this book. The author acknowledges assistance from the Washington State Firemen's Association, Northwestern Mutual Fire Association, National Board of Fire Underwriters, National Fire Protection Association, Washington Surveying and Rating Bureau, New Jersey Department of Education, United States Bureau of Mines, Mine Safety Appliances Company, Sanderson Safety Supply Company and the Fire Station Digest.

Firemen Cause Undue Loss in Foundry

Failure to use the proper method of fire-fighting caused an undue loss when a small fire broke out in a foundry building. The structure was of ordinary brick and steel truss construction. Outside of the cupola room, in which the fire occurred, it was fireproof. The roof was of reinforced concrete, the walls were twelve-inch brick, and the windows had metal frames and were fitted with wired glass. Access was gained to the cupola charging room by means of an elevator on the outside of the building.

With the exception of the kindling and coke for the cupola's charge, there was nothing combustible in this room, either in the contents or in construction. The charging room contained two cupolas and was approximately 20 x 40 feet in dimension. The fire occurred when one of the cupolas was dropped and sparks passed back up through the cupola, and out the charging door. It set fire to the kindling for the next charge of one of the cupolas. It might easily have been extinguished with a garden hose, so one critic believes, but the pressure from the city water through a 100-foot length of standpipe hose was not sufficient to reach the seat of the fire. The Fire Department arrived before other means of extinguishment were tried.

Instead of approaching the fire by means of the outside elevator and using extinguishers, the Fire Department went onto the roof of the adjoining building and broke through the wired glass windows.

As previously explained, the charging door to the cupola was open, and, when the firemen placed the stream into this room, it struck against the red-hot lining of the cupola, cracked the lining, and then warped the cupola itself so that it pulled over and cracked the concrete roof and floor, pulled the roof away from its supporting beams and caused considerable damage to the building and to the cupola itself.

Had the fire been allowed to burn out, no damage would have accrued other than possibly the cracking of some of the glass, which would have been a minor damage.

The kindling that was on fire was over in one corner of the room, the pile being approximately two feet wide, six feet long, and three feet high.

Billings, Mont., has ordered a 50-foot Pirsch ladder. The apparatus is to be delivered within ninety days.

Forest Fires Cause $60,274,960 Damage

A total of $60,274,960 damage was caused by forest fires in the United States in 1933 which destroyed 43,889,820 acres of land, according to a tabulation of the U. S. Forest Service.

The Forest Service's annual compilation of forest fire statistics places the property damage for 1933 at $60,274,960, compared with five-year average of $62,831,423. This loss represented tangible values only, and did not include watershed, recreational, scenic, soil, young reproduction, or other values amounting to untold millions in fire losses in the Southeastern States and a greater total in the Gulf States.

The total number of forest fires in the United States decreased about 10 per cent compared to the five-year average. Altogether, 87,435 fires were reported on unprotected and 53,287 on protected lands, making a total of 140,722 for the year. The five-year average for all forest fires was 156,183, of which 111,511 were on unprotected and 44,672 on protected areas.

Fully 90 per cent of the forest fires on protected areas were man-caused. Lightning caused 6.3 per cent of these fires, and practically all the rest were caused by human carelessness. Complete statistics for causes of fires on unprotected areas are not available.

Fairfield Chiefs Inaugurate "Question Box"

A feature of the regular meeting of the Fairfield County, Conn., Fire Chiefs' Emergency Plan was the inauguration of a "Question Box" for those Chiefs who did not care to bring subjects before the open meeting. The meeting was held at the Elks' Hall, South Norwalk, Conn., on the evening of Tuesday, November 27, the regular date of the meeting falling on Thanksgiving Eve.

Addresses of welcome were given by Fire Commissioners Leonard and Goren and Chief George Bogardus, of South Norwalk. President Knickerbocker appointed as members of the Legislative Committee: Fire Commissioner Merwin, of Shelton; and Chiefs McNamara, Danbury, and Burns, Bridgeport. In this connection, Judge Harry M. Hoop, Bronxville, past-president of the Firemen's Association of New York State, who was a guest, spoke of the excellence of a plan adopted in that state of referring all local bills to be brought before the legislature to the Committee on Legislation of his association, thereby avoiding duplication of such measures and insuring the passage of the best bills. He advised the new Legislative Committee of the Plan to consult with their state association before introducing bills in the Connecticut legislature.

It was moved by Chief George Brencher, Darien, that the Plan purchase a gavel to be presented to the Mid-Hudson-Harlem Valley Chiefs' Association, an organization formed on similar lines to the Plan. This was carried.

Chief Brencher also referred to a case in which a truck driver had driven over fire hose, in spite of orders not to do so, causing the hose to be ruined. The driver was arrested and fined. But the laws did not seem to be sufficiently explicit as to the authority of the Chief in the matter and he suggested that the Legislative Committee take the matter up.

"The Question Box" proved to be a popular departure. It was found to contain a number of questions when opened. Those discussed at the meeting were: What legal authority have officers of volunteer fire companies to compel the cleaning of the rear premises of stores of paper and other rubbish?" "Arriving at a fire with two pumpers, respectively of 500 and 750-gal. capacity, which one should be placed at the hydrant?" "Please explain method of ventilation at a fire and to what extent?" "What water pressure should be used to run a foam generator? Manufacturers' suggestions range from 80 to 120." The questions brought out much discussion.

Mayor Schwartz, of South Norwalk, made a short address, as did also Chief Chambers, Yonkers, N. Y.; Ex-Chief Sullivan, Greenwich, Conn.; and Chief Veit, Stamford. A vote of thanks was tendered to Chief Bogardus, South Norwalk, for the meeting place and entertainment provided.

Several Peter Pirsch deliveries have recently been made. A "quad" with a 750-gallon pumper has been delivered to Aurora, Ill. Elgin has just received a Pirsch 75-foot junior aerial and Geneva, Ill., has received a Pirsch 500-gallon pumper.

FALSE ALARMS

HANDICAPS

Through the Fire Chief, the city brought action against a motorist who collided with apparatus on the way to a fire. There were the usual number of witnesses for such a case, but the one on the stand was endowed with native bluntness. After a number of interruptions in his testimony he appealed to the judge:

"Your honor, I don't know what to do."

"Why, how's that."

"Your honor, I swore to tell the truth, but every time I try, some lawyer objects."

Pins are funny articles. They are pointed in one direction and headed in another.

TOO BUSY

The county court was crowded by those anxious to hear the assault suit. The village Chief had had words with a bystander who was hindering his men in their work. Finally blows were exchanged.

A witness on the stand explained the blows in great detail to the Court and the helplessness of the Chief. In astonishment the judge turned to the witness and asked:

"Do you mean the court to understand that you stood by and saw this man being struck again and again?"

"Yes, I saw it all."

"And you made no effort to interfere?"

"I couldn't."

"Why not?"

"I was filling my pipe."

Many students are like coffee—ninety-eight per cent of the active ingredient has been removed from the bean.

JUST A PEST

An after-dinner speaker is a fellow who eats a meal he doesn't want, so he can get up after it and tell a lot of jokes he doesn't remember to a group of people who have already heard them.

"Will you sit down in front so that I can see the game?"

"Sorry," the other replied, "I'm not built that way."

GLORIOUS DEATH

Chief "Smoky" Rogers told the following story about his friend Father Coleman. There was a fire in the basement of a dwelling. The basement was filled with smoke. The Chief and the Priest arrived at the fire simultaneously and entered the building. When the smoke cleared, the Chief saw some shelves in the distance and some empty liquor bottles.

He gave the priest a good-natured poke in the ribs and said:

"Father, look at the dead soldiers."

He replied, "Never mind. They all saw the priest before they died."

A committee is a body that keeps minutes and wastes hours.

OUT OF THE RACE

A fire had occurred in an empty building, but this time the police succeeded in apprehending the one responsible for the blaze. He was brought to Court.

"What is your occupation?" he was asked.

"I haven't any. I just circulate," answered the tramp.

Turning to the clerk, the judge said, "Please note that this gentleman is retired from circulation for thirty days."

No matter what you do, somebody always knew you would.

NEW APPLIANCES

Startled by the sound of approaching fire apparatus, a woman motorist who had had little driving experience, stalled her car near an intersection.

The policeman on the corner was also excited. He rushed over to her and shouted:

"Use your noodle, lady! Use your noodle!

"Goodness, me," she exclaimed. "Where is it? I've pushed and pulled everything else in the car."

A mosquito bit the Prince of Wales and gleefully hummed, "At last I have royal blood in my veins."

TWO WAYS

He had come from the smoker, and even though he tried to be silent as he unlocked the door, his wife heard him.

"What do you mean coming home at this time of the morning?" she asked.

"My dear, it's just twelve o'clock."

"It's past three o'clock," corrected his wife.

"Have your own way, dear, if you will, and believe a ninety-eight cent clock instead of me."

IN GOOD HANDS

His was a strange case. His scalp wound had healed but he was left with a strange neurosis. He was no longer cheerful, but was quiet and had a morbid outlook. He confided to his doctor:

"Doctor, I feel like killing myself. What shall I do?"

"Just leave it to me," said the doctor.

Don't fail to get a good education while you're young. It will come in handy when you have to help with your children's homework.

—Drawing by "Art" Espey

Season's Greetings From Arthur Espey

As this issue goes to press, busy hands are working in many fire stations throughout the nation to transform discarded toys to gifts that would be cherished by less fortunate children. Noted for their bigness of heart, firemen everywhere turn their thoughts at this time of the year particularly to the dissemination of Joy and Hapiness. It is my happy privilege to belong to the fire fighting fraternity. I join with the staff of FIRE ENGINEERING in wishing you a Merry Christmas, and a Healthful, Happy and Prosperous New Year.

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	Page
American District Telegraph Co.	437
American Steam Pump Co.	Inside Front Cover
Bi-Lateral Fire Hose Co.	446
Braxmar Co., C. G.	438
Brunssen Co., Geo.	450
Buckeye Iron & Brass Works	441
Burnham Laboratories	442
Cairns & Brother	450
Central Railway Signal Co., Inc.	441
Clay, Inc., John H.	446
Cover, H. S.	450
Darley & Co., W. S.	418-442
Eddy Valve Co.	446
Eureka Fire Hose Division of United States Rubber Products, Inc.	Back Cover
Fabric Fire Hose Co.	446
Federal Electric Co.	446
Fulton Bag & Cotton Mills	445
Gamewell Company	420
General Apparatus Corp.	438
General Fire Truck Corp.	417
General Products Co., The	446
Goodall Rubber Co.	446
Hale Fire Pump Co.	442
Hewitt Rubber Corp.	446
INFORMATION FOR BUYERS	449
International Automatic Coupling, Inc.	438
Koehler Mfg. Co.	450
Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc.	419
Midwestern Mfg. Co.	441
Mine Safety Appliances Co.	445
Northern Pump Co.	442
Pirsch & Sons, Inc., Peter	415
Smith Mfg. Co., D. B.	442
Special Clothing Co	445

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